LG

Service Manual

Model : KG110/KG115/MG110a/MG110b

LG

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KG110/KG115/
MG110a/MG110b

P/N : MMBD0061701

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Table Of Contents

1. INTRODUCTION

1.1 Purpose

This manual provides the information necessary to repair, calibration, description and download the features of KG110.

1.2 Regulatory Information

A. Security

Toll fraud, the unauthorized use of telecommunications system by an unauthorized part (for example, persons other than your company's employees, agents, subcontractors, or person working on your company's behalf) can result in substantial additional charges for your telecommunications services. System users are responsible for the security of own system.There may be risks of toll fraud associated with your telecommunications system. System users are responsible for programming and configuring the equipment to prevent unauthorized use. The manufacturer does not warrant that this product is immune from the above case but will prevent unauthorized use of common – carrier telecommunication service of facilities accessed through or connected to it. The manufacturer will not be responsible for any charges that are resulted from such unauthorized use.

B. Changes in Service

A local telephone company may make changes in its communications facilities or procedure. If these changes could reasonably be expected to affect the use of this phone or compatibility with the network, the telephone company is required to give advanced written notice to the user, allowing the user to take appropriate steps to maintain telephone service.

C. Maintenance Limitations

Maintenance limitations on this model must be performed only by the manufacturer or its authorized agent. Therefore, note that unauthorized alternations or repair may affect the regulatory status of the system and may void any remaining warranty.

D. Notice of Radiated Emissions

This model complies with rules regarding radiation and radio frequency emission as defined by local regulatory agencies. In accordance with these agencies, you may be required to provide information such as the following to the end user.

E. Interference and Attenuation

Phone may interfere with sensitive laboratory equipment, medical equipment, etc. Interference from unsuppressed engines or electric motors may cause problems.

F. Electrostatic Sensitive Devices

ATTENTION

Boards, which contain Electrostatic Sensitive Device (ESD), are indicated by the sign.

Following information is ESD handling : 

- Service personnel should ground themselves by using a wrist strap when exchange system boards.
- When repairs are made to a system board, they should spread the floor with anti-static mat which is also grounded.
- Use a suitable, grounded soldering iron.
- Keep sensitive parts in these protective packages until these are used.
- When returning system boards or parts like EEPROM to the factory, use the protective package as described.

2. SYSTEM SPECIFICATION

Item	Target Specification
Form Factor	Bar Type
Standard Battery	(830mAh , Li-ion) Size : 34(W) X 50(H) X 4.5(T) mm Weight: 20g
Size	102.8 X 44 X 16.5mm
Weight	71 Gram(with standard battery)
Standby Current	Below 3.0 mA under the least current consumption (e.g. Paging Period = 9)
Talk Time	Up to 3 hrs (GSM Tx Lev:5)
Standby Time	Up to 200 hrs : Paging Period 9, RSSI 85dBm
Antenna	Internal
LCD	Main LCD: CSTN 128° X 128 Pixels 65K Color
Back Light	Blue LED
PC Sync	No
Indicator	LED None
Vibrator	Yes (Cylinder Type)
Buzzer	Yes
C-MIC	Yes
Receiver	Yes
Earphone Jack	Optional
SIM Socket	Yes (SIM Block Type)
Volume Key	No
Voice Key	No
MP3/AAC	No
MIDI 40	Poly Software MIDI
I/O Connector	24Pin
Basic Accessory	Travel Adaptor

3. TECHNICAL BRIEF

3.1 KG110 Block Diagram

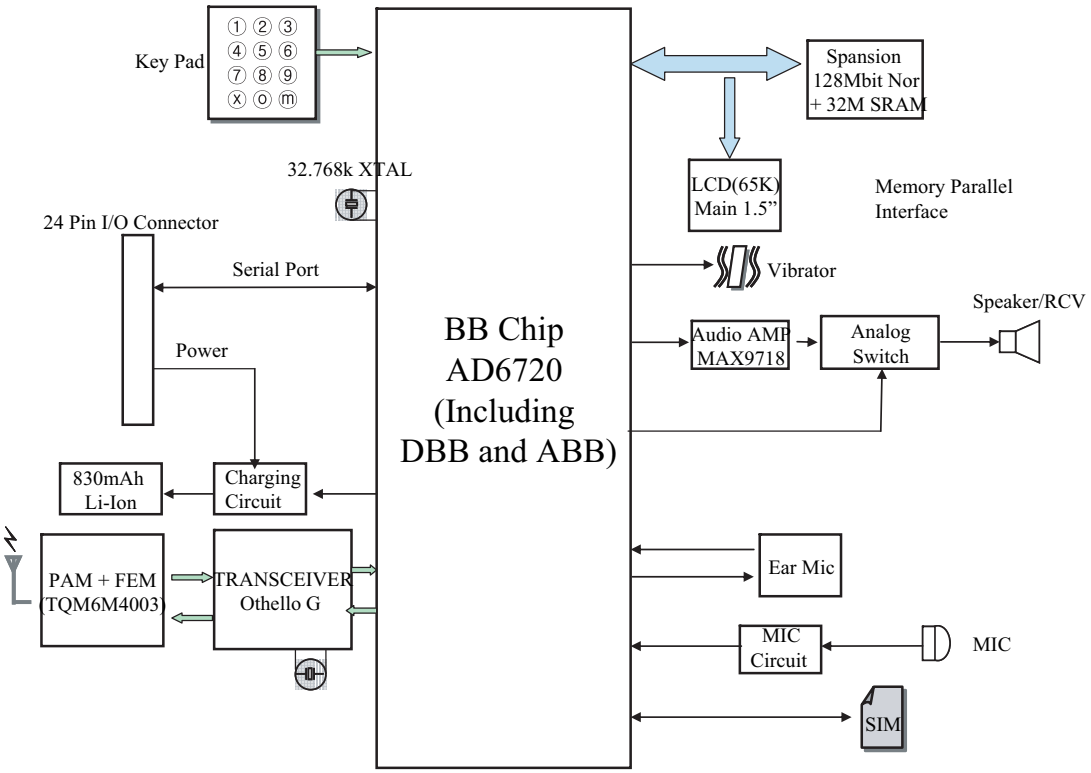


Figure 3-1: KG110 Top Level Block Diagram

The Figure 3-1 shows the top level block diagram of KG110, it contains RF and BB part. The following list is the detailed:

1. AD6720 : ADI baseband chipset,
   including Digital Base Band (DBB) and Analog Base Band ABB

2.TQM6M4003 : Triquint PAM and Ant Switch

3. Transceiver : ADI Othello G AD6548

4. Flash: Spansion 128Mbit : 32Mbit

5. Others:

A. 22 keys

B. 128 x 128 65K CSTN –LCD module

C. Vibrator

D. Mic

E. Speaker and receiver

F. Ear-jack

G. Sim socket

H. Battery connector

3. TECHNICAL BRIEF

3.2 RF Part Introduction

The RF parts consists of a transmitter part, a receiver part, a voltage supply part, the crystal reference system. And the main RF Chipset AD6548 is a highly integrated direct conversion radio solution that combines, on a single chip, Quad Band Radio (GSM850,E-GSM,DCS1800 and PCS1900 and power management functions necessary to build the most compact GSM radio solution possible. This quad-band GSM transmit module integrates a PA, a low-pass filter, a linear Tx / Rx switch along with PA and switch control combined with ESD protection circuitry in one module,.

3.2.1 Receiver Part

The Receiver part in AD6548 contains all active circuits completely, full receiver chain with the exception of discrete front-end RF SAW filters. The AD6548 uses direct conversion receiver architecture of the OthelloTM family. For Quad band applicationsthe front end features four fully integrated programmable gain differential LNAs. The RF is then downconverted by quadrature mixers and then fed to the baseband programmable-gain amplifiers and active filters for channel selection. The Receiver output pins can be directly connected to the baseband analog processor. The Receive path features automatic calibration and tracking to remove DC offsets. The RF Receiver block is shown as below.

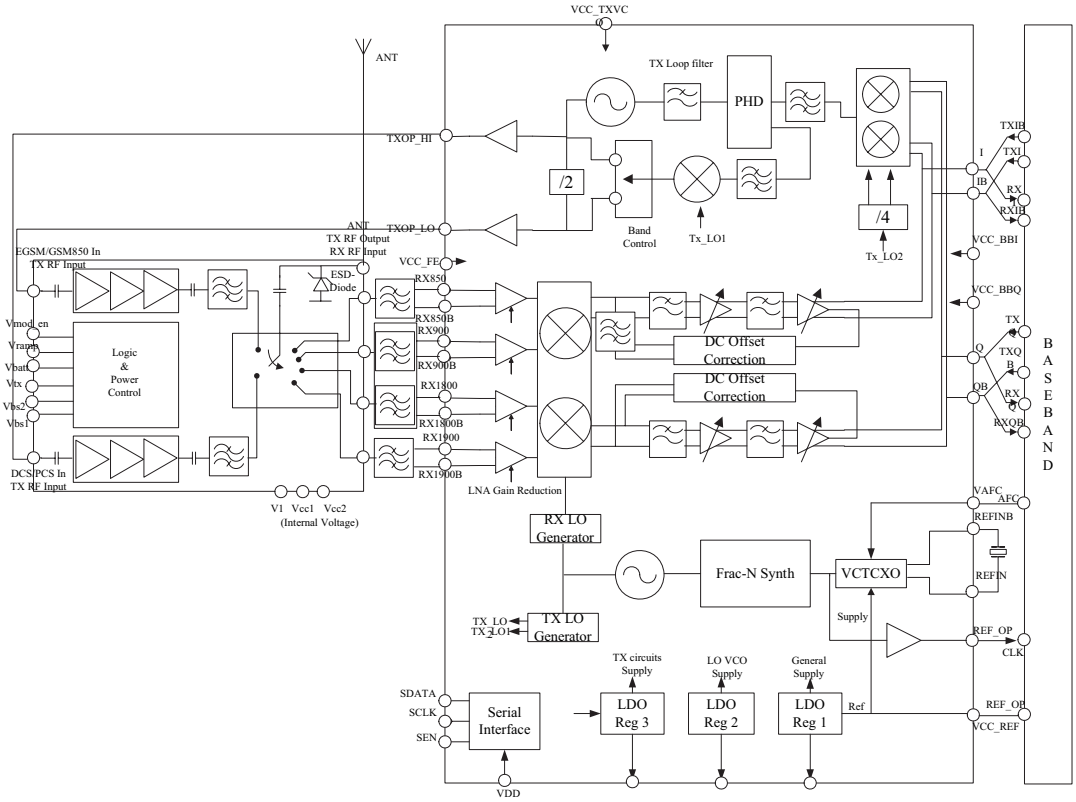


Figure 3-2: The RF Receiver Block

A. Low Noise Amplifiers

The AD6548 includes four fully integrated Low Noise Amplifiers (LNAs), to support quad band applications without further external active components. The LNAs have differential inputs which minimize the effect of unwanted interferers. The inputs are easily matched to industry standard FEMs or discrete Rx SAW filters. The outputs of the LNAs are directly coupled to the down-converting mixers. The voltage gain of the LNAs are typically 24 dB. Each LNA can be switch to a low gain mode when receiving large input signals as part of the AGC system.

B. Down-Converting Mixers

Two quadrature mixers are used to mix down the signals from the LNAs, one for the high bands (1800 and 1900 MHz) and one for the low bands (850 and 900 MHz). The outputs of the mixers are connected to the baseband section through an integrated single pole filter with nominal cut-off frequency of 800kHz. This acts as a “roofing filter” for the largest blocking signals (i.e. those 3MHz) and prevents the baseband amplifiers from being overloaded.

C. Baseband Amplifiers / Low Pass Filters

The baseband amplifiers provide the majority of the analog receiver gain.
The filtering is provided by an integrated 5th order Chebyshev filter giving the necessary adjacent channel and blocking filtering, it is also acting as an anti-alias filtering for Baseband IC’s converters. A final low pass pole is possible at each of the baseband outputs via internal series resistor along with an external shunt capacitor.

The external capacitor is not required with ADI baseband ICs. The on chip filter has an auto calibration feature ensuring that the filters are tuned for optimum performance. The baseband amplifiers have programmable gain for system AGC.
A total of 57 dB of gain control is provided in 3dB steps programmable over the serial interface. This together with the LNA gain control gives a total of 77dB of gain control range.
The receive baseband outputs are routed to the common Rx/Tx I/Q ports for connection with the baseband converters.

D. Baseband Output D.C. Offset Correction

In order to minimize D.C. offsets inherent in the receiver and maximize dynamic range a D.C offset correction circuit is integrated. This correction is triggered over the serial bus and then an offset tracking loop is enabled to minimize residual offsets under all conditions. The tracking loop is fully hardware integrated, requiring no software intervention.

E. Receiver Local Oscillator (LO) Generator

The Rx LO generator is used to avoid DC offset problems associated with LO leakage into the receiver RF path. By operating the VCO at a frequency other than the desired receive frequencies,any leakage of the VCO (e.g. via package) will fall out of band.
The LO generator is used to convert the offset synthesized VCO output to the on-frequency quadrature LO required by the chipset.
The LO generator is implemented as a regenerative frequency divider, performing a 2/3 multiplication of the VCO output for the high band (DCS1800/PCS1900) and a 1/3 multiplication for low band (E-GSM/GSM850).

3.2.2 Transmitter Part

The Transmitter part contains AD6548 active parts and PAM .
The transmit section of the AD6548 radio implements a translation loop modulator.
This consists of a quadrature modulator, high speed phase-frequency detector (PFD) with charge pump output, loop filter, TX VCO and a feedback down converting mixer.
The VCO output (divided by 2 for low band) is fed to the power amplifier with a portion internally fed back into the down-converting feedback mixer to close the feedback loop.

A. Power Amplifier Module

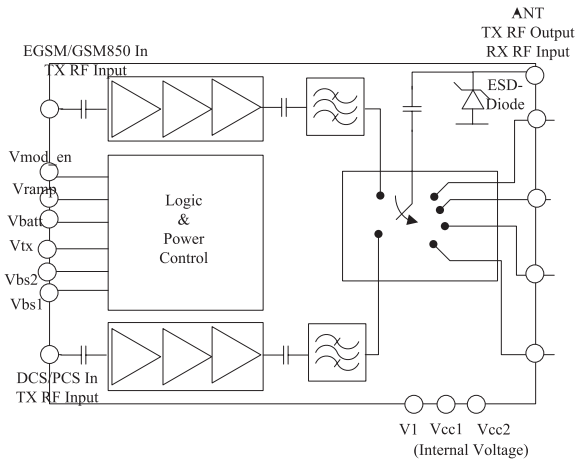


Figure 3-3: Power Amplifier Module

The advanced quad-band Transmit Module designed for mobile handset applications provides full RF transmit functionality.The GSM850/900 and DCS/PCS power amplifier blocks including power control are combined with the low insertion loss quad-band pHEMT switch, Tx harmonics filtering, integrated switch decoder, four receive ports, and full ESD protection. This architecture eliminates the need for any PA-to-switch design effort for phone designers. All four Rx ports are frequency independent and allow flexible routing to the transceiver. Fabricated in high-reliability InGaP HBT / pHEMT technology, the module supports GPRS class 12 operation and provides 50 Ohms input and output impedances at all RF input and output ports. The module control inputs are CMOS compatible and has no need for an external reference voltage. With its excellent efficiency performance in all 4 bands, the power amplifier and switch module contributes to the overall talktime targets of next generation mobile handset designs.

Operating Mode	Control Voltage			
	Vmod_en	Vtx	Vbs1	Vbs2
TX GSM 850/900	H	H	L	L
TX DCS/PCS	H	H	H	L
RX1	H	L	L	L
RX2	H	L	L	H
RX3	H	L	H	L
RX4	H	L	H	H
Sleep Mode	L	L	L	L

Table 3-1: PAM Truth Table

B. Quadrature Modulator

The Quadrature modulator takes the baseband I & Q signals and translates these into a GMSK signal at the Transmit Intermediate Frequency (TX IF). After bandpass filtering and limiting the TX IF signal is used as the reference input to the Phase Frequency Detector (PFD) of the transmit PLL.

C. Phase Frequency Detector (PFD)

The PFD ensures that the transmitted signal contains the required modulation and is accurately locked to the desired GSM channel. The downconverted feedback signal from the TXVCO and the Quadrature Modulator output are phase compared by the PFD.
The PFD charge pump generates a current pulse proportional to the difference in phase which is applied to the loop filter.

D. Loop filter

To minimize complexity of the external PCB layout the TX loop filter is fully integrated into the IC. At power up the filter is automatically calibrated as part of the baseband filter cal, eliminating process tolerances. The calibration is fully integrated and requires no extra programming.

E.TX VCO

The Transmit Voltage Controlled Oscillator (TX VCO) and tank components are a fully integrated subsystem. The subsystem includes PA drivers so the outputs are used to directly drive the external PAs. The low noise oscillator design and internal filtering mean that external TX SAW filters are not required. In Low band operation the TX VCO output is divided by two and filtered. The TX VCO is automatically calibrated to ensure optimum performance over its operating frequency of 1648 to 1910 MHz.

F. Feedback Down-Converting Mixer

The feedback down converting mixer is used to translate the TX VCO output frequency to the TX IF. An integrated band pass filter exists between the mixer and the PFD to filter the mixers unwanted side band and higher order mixing products.

G.Transmit Frequency Plan

Unlike many other translation loop modulators the AD6548 uses only a single VCO source to derive the local oscillator signal for both the Feedback Down-Converting Mixer and the Quadrature modulator. Therefore there is a fixed relationship between the Tx IF frequency and the LO VCO frequency .This ratio was chosen to minimize VCO tuning range, TX IF frequency variation and ensure excellent transmit spectral mask performance. The Feedback-Down Converting Mixer operates low side injection for the high bands and high side injection for the low bands. The final relationship between the transmitted TX frequency frequency and the LO VCO frequency is different between the two bands. These relationships are taken account of in the synthesizer architecture and programming.

H. Main Frequency Synthesizer

The AD6548/9 has a single fast-locking fractional synthesizer used for VCO control in both receive and transmit mode. The entire system including VCO, tank, fractional N dividers, sigma delta compensation, charge pump and loop filters are fully integrated.
The only external component is a low cost crystal for the reference.
The synthesizer is controlled via the serial interface. The VCO is fed into the respective dividers to generate the appropriate LO frequencies for the RX and TX bands.

I. Fractional N Dividers

The fractional N divider allows the PLL system to have a smaller step size than the comparison frequency which is set by the external reference to 26 MHz.
This feature allows all the GSM frequency band rasters to be achieved, with fast lock times and good phase noise characteristics. The divider section consists of a dual modulus 8/9

prescaler, integer M & A dividers, and fractional N system based on sigma-delta modulation to generate the required fractional divide ratio. The Denominator of the fractional divider can be set to 3 different values, (1040, 1170, 1235), depending on the mode of operation.
For example a denominator of 1040 with an input fraction F maintains an average value of F/1040 allowing 25 kHz steps when operated at a reference of 26 MHz.

J. Phase Frequency Detector/Charge Pump

A Phase Frequency Detector (PFD) is used for the PLL phase detector.
The charge pump is designed such that good matching of up and down currents is achieved over a wide output operating range. The charge pump output is internally routed to the integrated synthesizer loop filter.

K. Synthesizer Loop filter

To minimize complexity of the external PCB layout the Main Synthesizer loop filter is also fully integrated into the IC. No external components or adjustments are required .

L.Voltage Controlled Oscillator

The integrated voltage controlled oscillator (VCO) is a complete self-calibrating subsystem. This employs a fully automated digital self-calibration function to ensure optimum phase noise performance over the entire frequency range.
The VCO generates frequencies between 2520MHz and 2985MHz as required to operate in the four bands for RX and TX.

3.2.3 The Crystal Reference System

The AD6548 requires only an external low cost crystal as the frequency reference. The circuitry to oscillate the crystal and tune its frequency is fully integrated. The Oscillator is a balanced implementation requiring the crystal to be connected across 2 pins. There is a programmable capacitor array included for coarse tuning of fixed offsets (e.g. crystal manufacturing tolerance), and an integrated varactor for dynamic control. The oscillator is designed for use with a 26MHz crystal.
The crystal is connected as shown in figure.

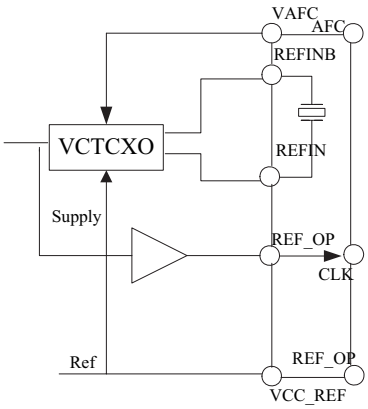


Figure 3-4: The Crystal Reference System

Dedicated control software ensures excellent frequency stability under all circumstances.

3.2.4 Power Management

For direct battery supply connect, and to reduce external circuitry complexity the AD6548/9 features three Low Drop Out Regulators (LDOs). The three LDOs provide isolation of the oscillators and sensitive circuits from unwanted power supply and cross coupled noise. They also ensure the IC operation is robust over a wide range of power supply voltages. For power management the LDOs are independently controlled via the 3 wire serial bus.

A.LDO Usage

The following table describes the LDO usage:

LDO1	LDO2	LDO3
Rx and Tx baseband sections	Main VCO	TX VCO

Table 3-2: Intended LDO Use

The LDO outputs require external connection to the respective pins described in table 3, and each requires decoupling capacitors.The LDOs are designed to be unconditionally stable regardless of the capacitor's ESR.

LDO OP	External Connection
VLDO1	VCC_FE, VCC_BBI, VCC_BBQ
VLDO2	No external Connections, except for decoupling
VLDO3	No external Connections, except for decoupling

Table 3-3: LDO Connections

LDO1 derives its input references from the crystal supply voltage (VCC_REF).
It is therefore expected that VCC_REF be supplied from a external LDO of nominal supply voltage 2.75V

(e.g. ADP3330 or Analog Baseband IC: Vout=2.75V 1.4%)

3.3 Baseband Introduction

3.3.1 Baseband Processor (AD6720 , U101)

• AD6720 is an ADI designed processor

• AD6720 consists of

1. Control Processor Subsystem including:

• 32-bit MCU ARM7TDMI Control Processor

• 39 MHz operation at 1.8V

• 1Mb of on-chip System SRAM Memory

2. DSP Subsystem including:

• 16-bit Fixed Point DSP Processor

• 91 MIPS at 1.8V

• Data and Program SRAM

• Program Instruction Cache

• Full Rate, Enhanced Full Rate and Half Rate

• Speech Encoding/Decoding

• Capable of Supporting AMR & PDC Speech Algorithms

3. Peripheral Functions

• Parallel and Serial Display Interface

• Keypad Interface

• Flash Memory Interface

• Page-Mode Flash Support

• 1.8V and 3.0V, 64 kbps SIM Interface

• Universal System Connector Interface

• Data Services Interface

• Battery Interface (e.g. Dallas)

4. Other

• Supports 13 MHz and 26 MHz Input Clocks

• 1.8V Typical Core Operating Voltages

• 289-Ball Package (12x12mm) , 0.65mm Ball pitch

5. The AD6720 baseband transmit section supports the following

• mobile station GMSK modulation power classes:

• GSM 900/850 power classes 4 and 5,

• DCS 1800 power classes 1 and 2, and

• PCS 1900 power classes 1 and 2

3.3.2 Interconnection with external devices

A. RTC block interface

Countered by external X-TAL

The X-TAL oscillates 32.768KHz

B. LCD module interface

Signals	Description
L_MAIN_LCD_CS	MAIN LCD driver chip enable.
LCD_RESET	This pin resets LCD module.
LCD_WR	Enable writing to LCD Driver.
LCD_RD	Enable reading to LCD Driver.
LCD_RS	This pin determines whether the data to LCD module data or control data.
A1	Select 16bits interface mode for MAIN LCD.

Table 3-4: LCD Pin Description

The backlight of LCD module is controlled by AD6720 via AAT3110 , U300.
The control signals related to Backlight LED are given bellow.

Signals	Description
LCD_LED_CTL	Control LCD backlight level in 4 steps
DISP_LIGHT	Current source for backlight LED

Table 3-5. Description Of LCD Backlight LED Control

C. RF interface

The AD6720 control RF parts through PA_BAND, ANT_SW1, ANT_SW2, ANT_SW3 , CLKON ,PA_EN, S_EN, S_DATA, S_CLK, RF_PWR_DWN.

Signals	Description
PA_BAND	(GPO17) PAM Band Select
ANT_SW1	(GPO9)Antenna switch Band Select
ANT_SW2	(GPO11) Antenna switch Band Select
RF_PWR_DWN(GPO	4) Power down Input
CLKON	RF LDO Enable/Disable

Signals	Description
PA_EN	(GPO16) PAM Enable/Disable
S_EN	(GPO19) PLL Enable/Disable
S_DATA	(GPO20) Serial Data to PLL
S_CLK	(GPO21) Clock to PLL

Table 3-6. RF Control Signals Description

D. SIM interface

The AD6720 provides SIM Interface Module. The AD6720 checks status periodically during established call mode whether SIM card is inserted or not, but it doesn't check during deep Sleep mode. In order to communicate with SIM card, 3 signals SIM_DATA, SIM_CLK, SIM_RST(GPIO_23) are required.
The descriptions about the signals are given by bellow Table 3-7 in detail.

Signals	Description
SIM_DATA	This pin receives and sends data to SIM card. This model can support only3.0 volt interface SIM card.
SIM_CLK	Clock 3.25MHz frequency.
SIM_RST	Reset SIM block(GPIO_23)

Table 3-7: SIM Control Signals Description

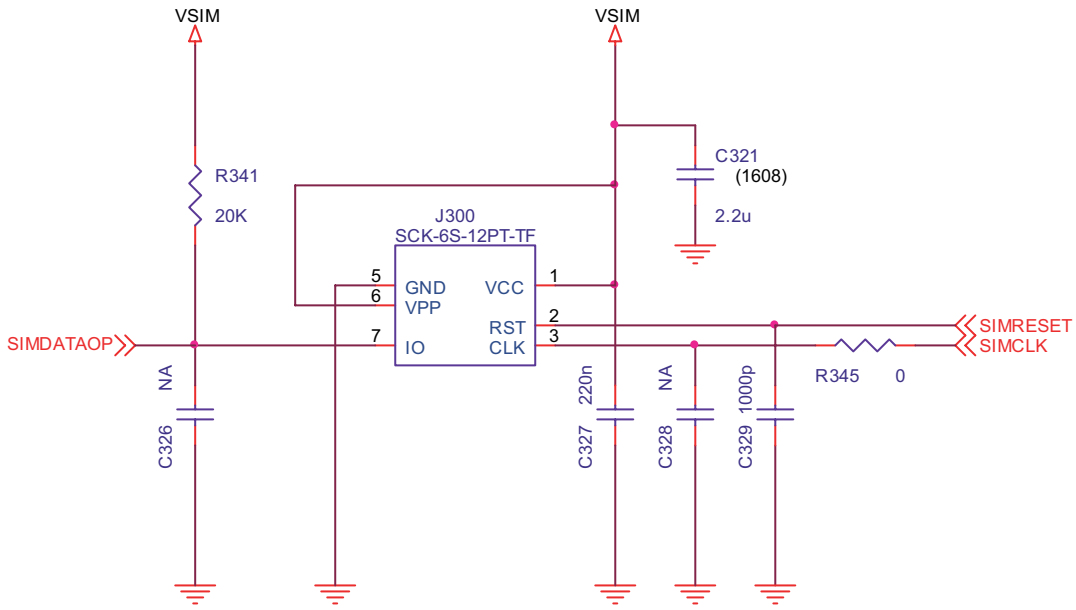


Figure 3-5: SIM Interface of AD6720

E. LDO Block

There are 8 LDOs in the AD6720.

- VCORE : supplies Digital base band Processor core and AD6720 digital core
- VMEM : supplies external memory and the interface to the external memory on the digital base band processor (1,8V or 2.8V, 150mA)
- VEXT : supplies Radio digital interface and high voltage interface (2.8V, 170mA)
- VSIM : supplies the SIM interface circuitry on the digital processor and SIM card (2.85V, 20mA)
- VRTC : supplies the Real-Time Clock module (1.8 V, 20 mA)
- VABB : supplies the analog portions of the AD6720
- VMIC : supplies the microphone interface circuitry (2.5 V, 1 mA)
- VVCXO : supplies the voltage controlled crystal oscillator (2.75 V, 10 mA)

3.3.3 Battery Charging Block

1. It can be used to charge Lithium Ion batteries.

Charger initialization, trickle charging, and Li-Ion charging control are implemented in hardware.

2. Charging Process

- Check charger is inserted or not

- If AD6720 detects that Charger is inserted, the CC-CV charging starts.
- Exception : When battery voltage is lower than 3.2V, the precharge (low current charge mode) starts firstly.
- And the battery voltage reach to 3.2V the CC-CV charging starts.

3. Pins used for charging

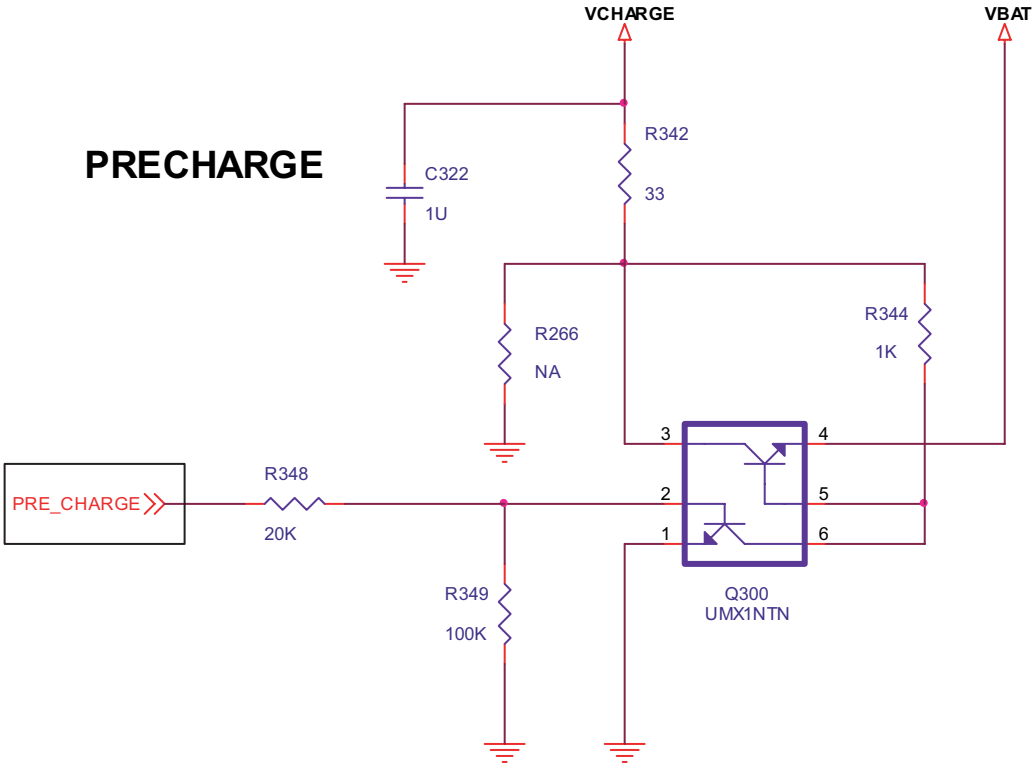
- VCHG : charger supply.
- GATEDRIVE : charge DAC output
- ISENSE : charge current sense input
- VBATSENSE : battery voltage sense input.
- BATTYPE : battery type identification input
- REFCHG : voltage reference output

4. TA (Travel Adaptor)

- Input voltage: AC 85V ~ 260V, 50~60Hz
- Output voltage: DC 5.2V (0.2 V)
- Output current: Max 800mA (50mA)

5. Battery

- Li-ion battery (Max 4.2V, Nom 3.7V)
- Standard battery: Capacity - 830mAh



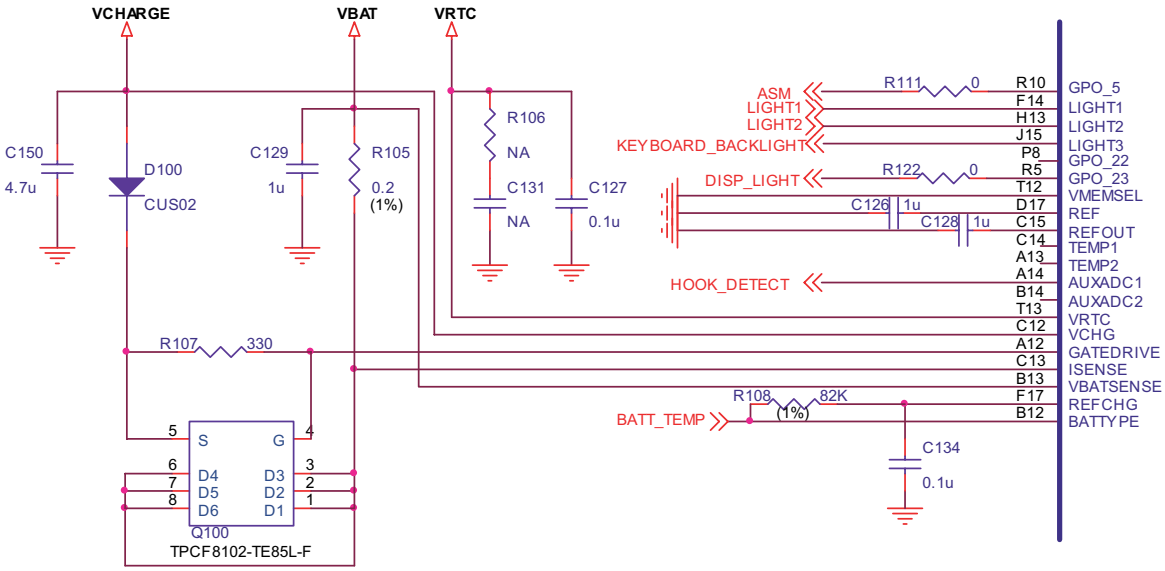


Figure 3-6: Circuit For Battery Charging

3.3.4 Display and Interface

• Main LCD

Controlled by L_MAIN_LCD_CS, LCD_RESET, LCD_RS, LCD_WR, LCD_RD, LCD_ID, L_DATA[00:15] ports

• L_MAIN_LCD_CS : MAIN LCD driver chip enable. MAIN LCD driver IC has own CS pin

• LCD_RST : This pin resets LCD module. This signal comes from AD6720 directly.

• LCD_RS: This pin determines whether the data to LCD module are display data or control data.

• L_WR : Write control Signal

• L_RD : Read control Signal. But this pin used only for debugging.

• L_DATA[00:15] : Parallel data lines.

• LCD_ID: LCD type selection signals

• For using 65K color, data buses should be 16 bits.

Properties Spec. Unit

Active Screen Size 35.78*40.05*2.8 mm

Color Depth 65,536 colors

Resolution 128 X RGB X 128 dots

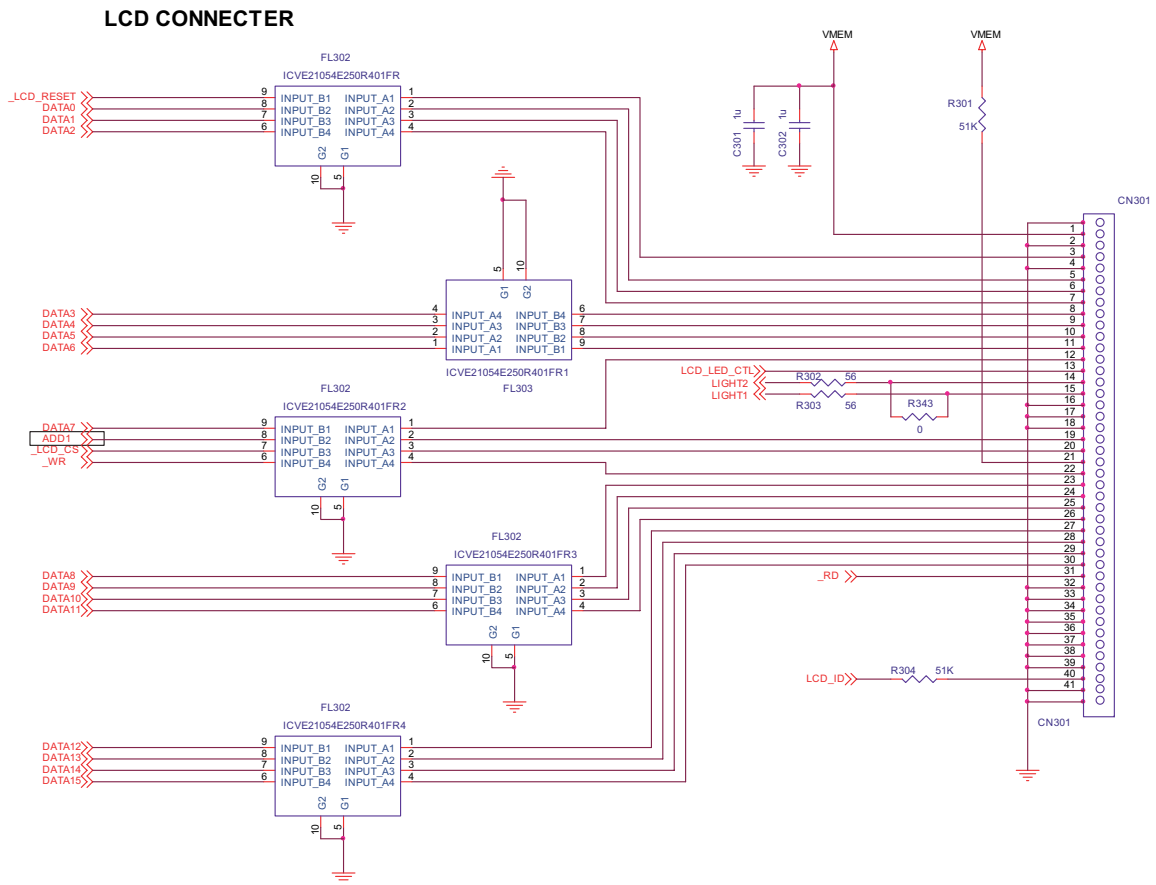


Figure 3-7: LCD Interface Circuit

3.3.5 Keypad Switches and Scanning

The key switches are metal domes, which make contact between two concentric pads on the keypad layer of the PCB when pressed. There are 21 switches, connected in a matrix of 5 rows by 5 columns and additional GPIO 35 for KEY_ROW5, as shown in Figure 3-x, except for the power switch (KB1), which is connected independently. Functions, the row and column lines of the keypad are connected to ports of AD6720. The columns are outputs, while the rows are inputs and have pull-up resistors built in. When a key is pressed, the corresponding row and column are connected together, causing the row input to go low and generate an interrupt. The columns/rows are then scanned by AD6720 to identify the pressed key.

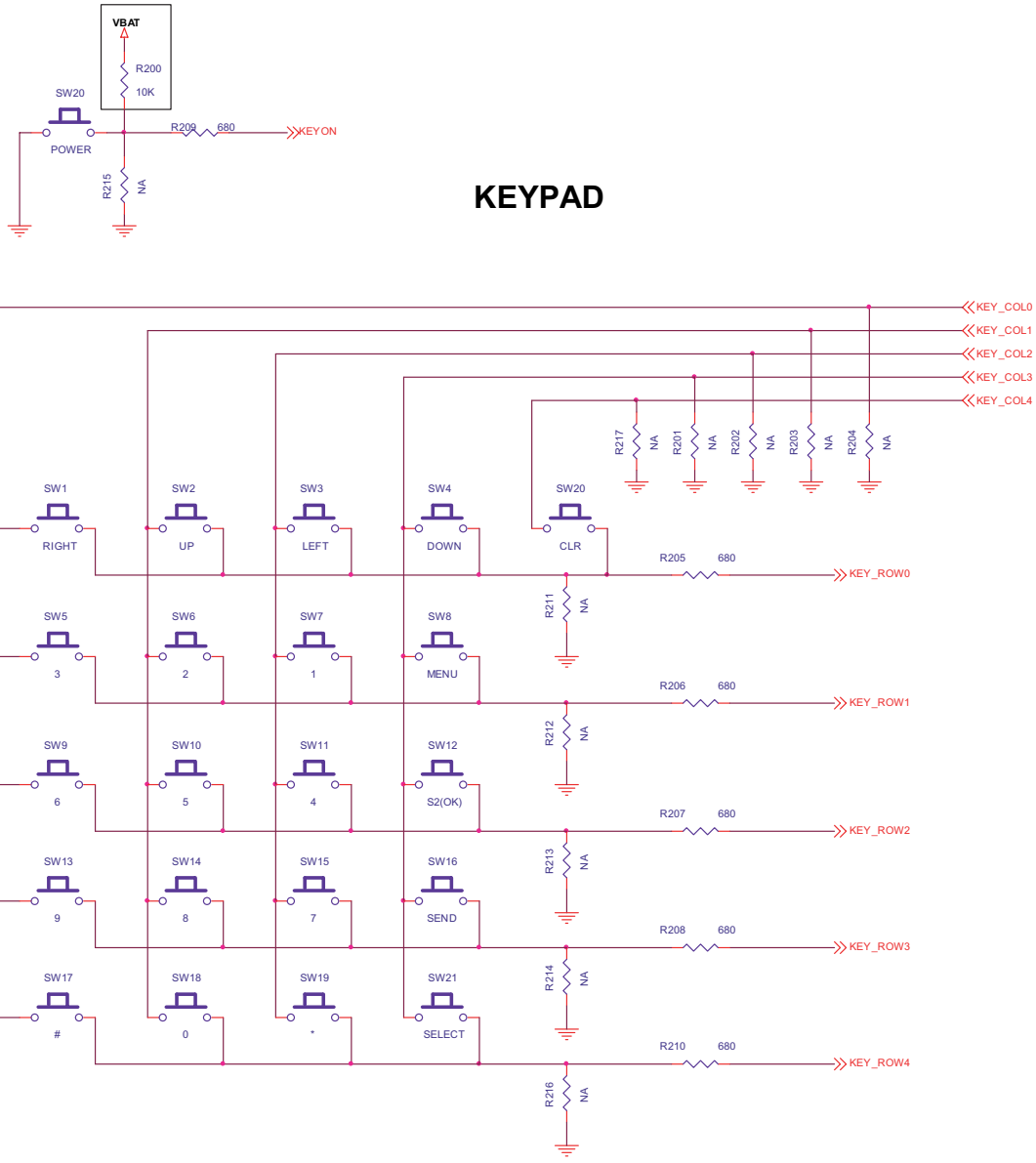


Figure 3-8: Keypad Switches and Scanning

3.3.6 Microphone

The microphone is placed to the front cover and contacted to main PCB.
The audio signal is passed to AIN1P and AININ pins of AD6720.
The voltage supply VMIC is output from AD6720, and is a biased voltage for the AIN1P.
The AIN1P and AIN1N signals are then A/D converted by the voiceband ADC part of AD6720.
The digitized speech (PCM 8KHz ,16KHz) is then passed to the DSP section of AD6720 for processing (coding, interleaving etc).

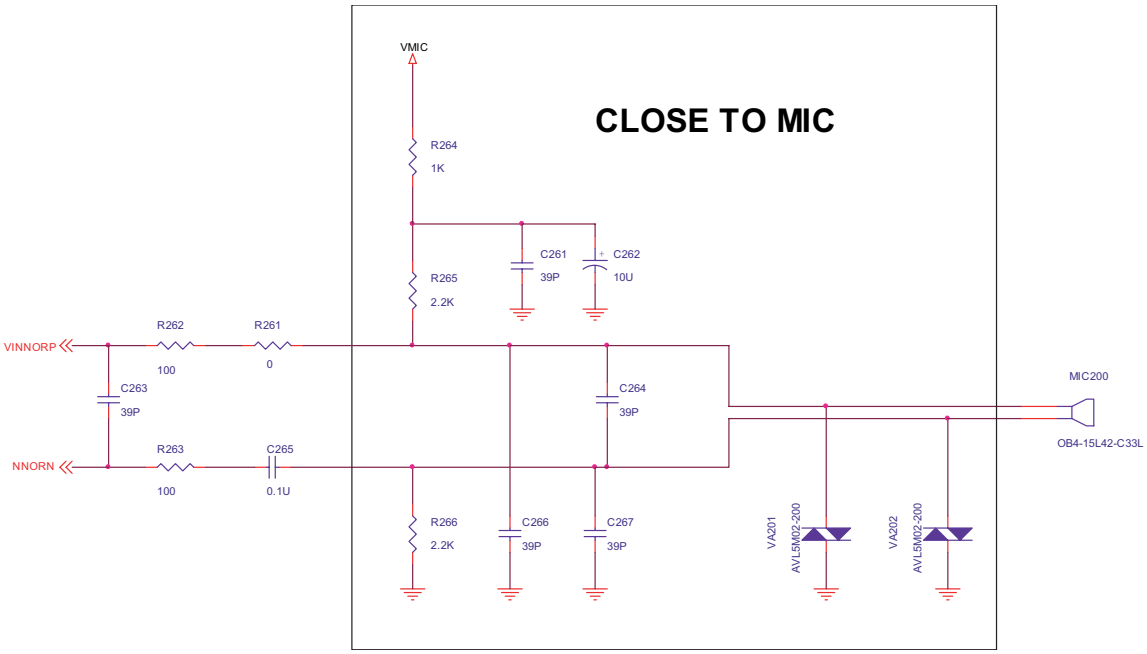


Figure 3-9: Connection Between Microphone And AD6720

3.3.7 Soft-midi and Main Speaker

The TTPCom Embedded MIDI & Polyphonic Orchestra product, “TEMPO”, is a complete MIDI music player solution offering the following features:

- MIDI-standards compliant
- MIDI files playable as polyphonic ringtones
- Low memory footprint - less than 8 kB internal MCU system RAM
- 40 notes polyphony
- Intelligent note-stealing algorithm ensures optimum use of available synthesiser polyphony
- Open API enabling product differentiation via the addition of MIDI music support to existing and new customer applications
- MIDI file parser supports Standard MIDI (formats 0, 1 and 2), SMAF-MA3, GM-Lite and SP-MIDI

The main speaker is driven directly by AD6720 AOUT1P and AOUT1N pins and the gain is controlled by the PGA in an AD6720.

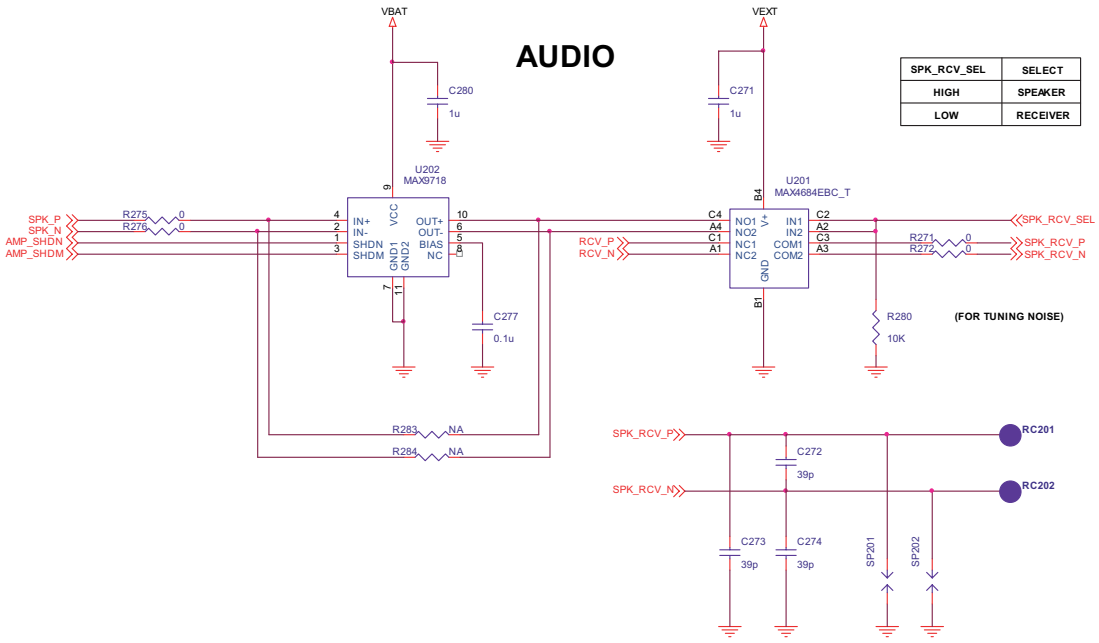


Figure 3-10: Main Speaker Circuit

3.3.8 Headset Interface

This phone has 5 electrodes such as GND, AUXIP, ACK_DETECT, HOOK_DETECT.
This type supports mono sound.

Switching from Receiver to Headset Jack

If jack is inserted, JACK_DETECT goes from high to low.
Audio path is switched from receiver to earphone by JACK_DETECT interrupt.

Switching from Headset Jack to Receiver

If jack is removed, JACK_DETECT goes from low to high.
Audio path is switched from earphone to receiver by JACK_DETECT interrupt.

Hook detection

If hook-button is pressed, HOOK_DETECT is changed from low to high.
This is detected by AUXADC2.

And then hook is detected.

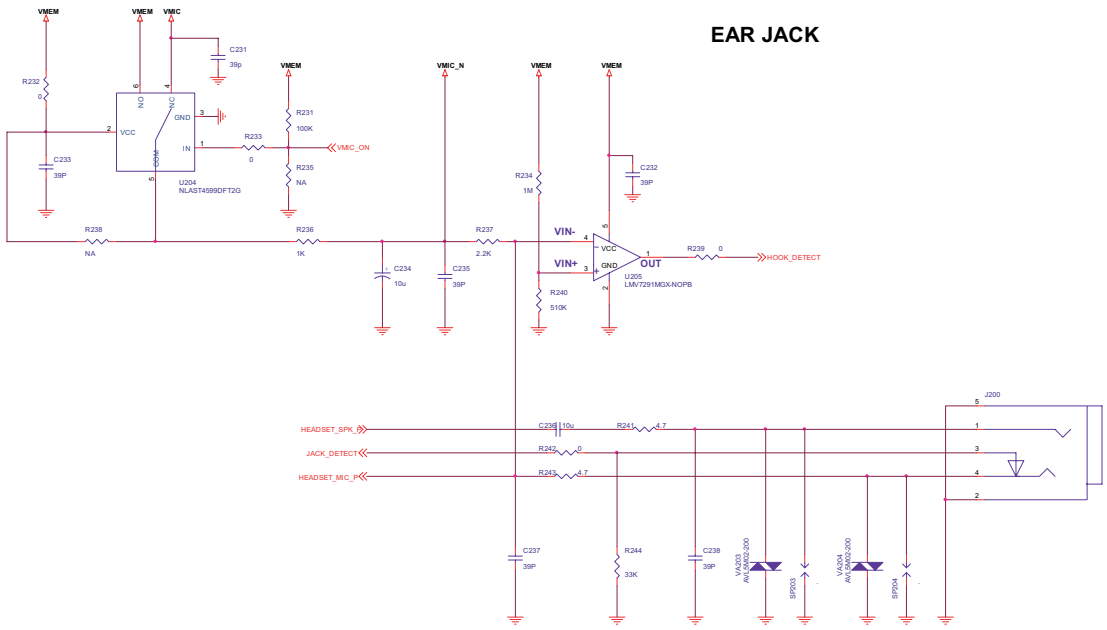


Figure 3-11: Headset Jack Interface

3.3.9 Key Back-light Illumination

In key back-light illumination, there are 6 Blue LEDs in Main Board, which are driven by KEY_BACKLIGHT signal from AD6720.

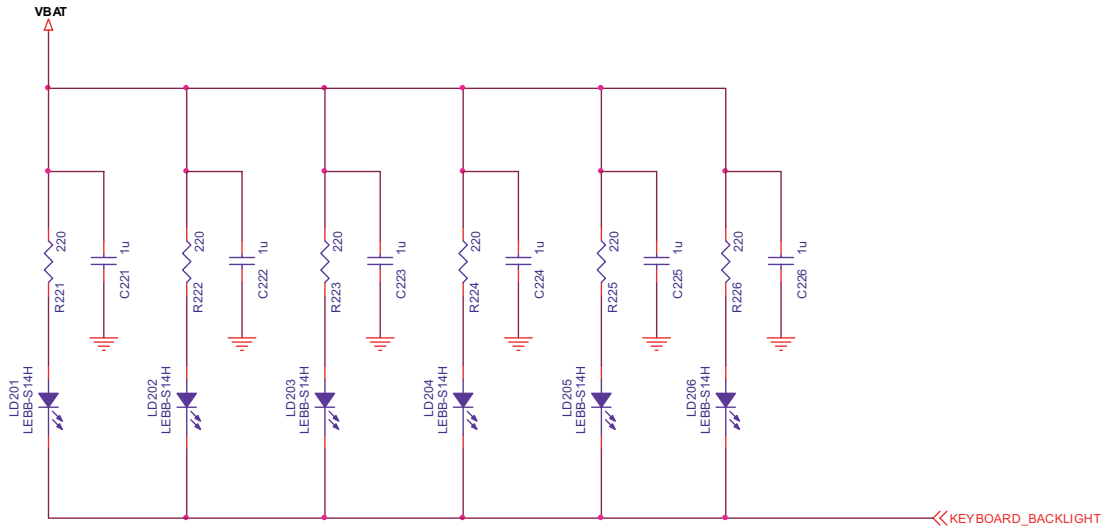


Figure 3-12: Key Backlight Illumination

3.3.10 LCD Back-light Illumination

LCD backlight LEDs is controlled by AD6720 via AAT3110, U300.

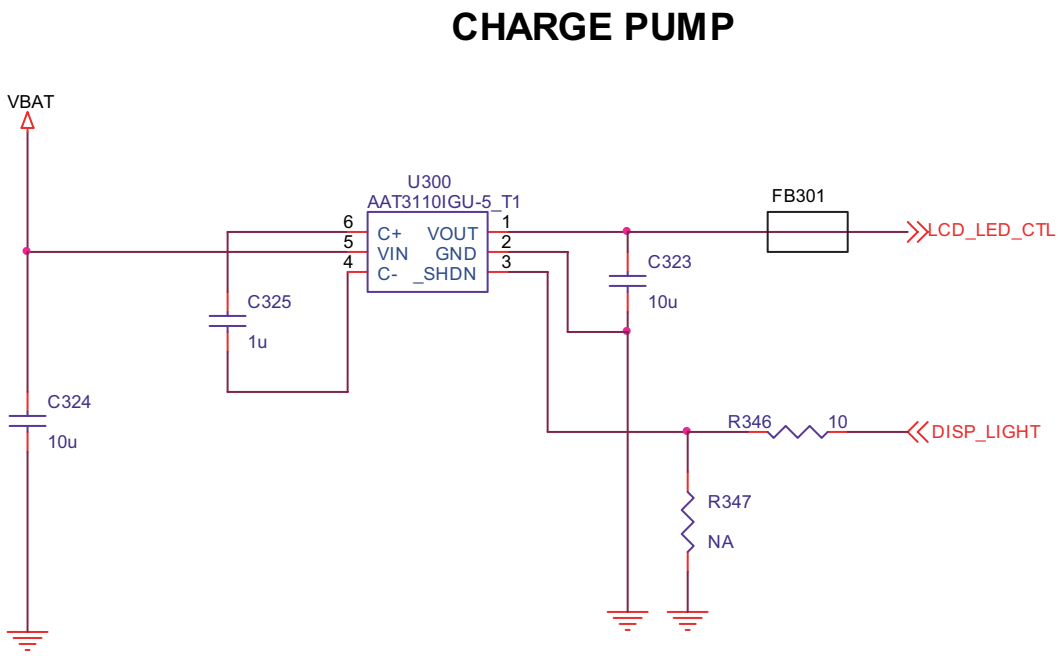


Figure 3-13: Main LCD Backlight Illumination

3.3.11 VIBRATOR

The vibrator is placed in the folder cover and contacted to LCD MODULE.
The vibrator is driven from VIBRATOR (GPIO_0) of AD6720

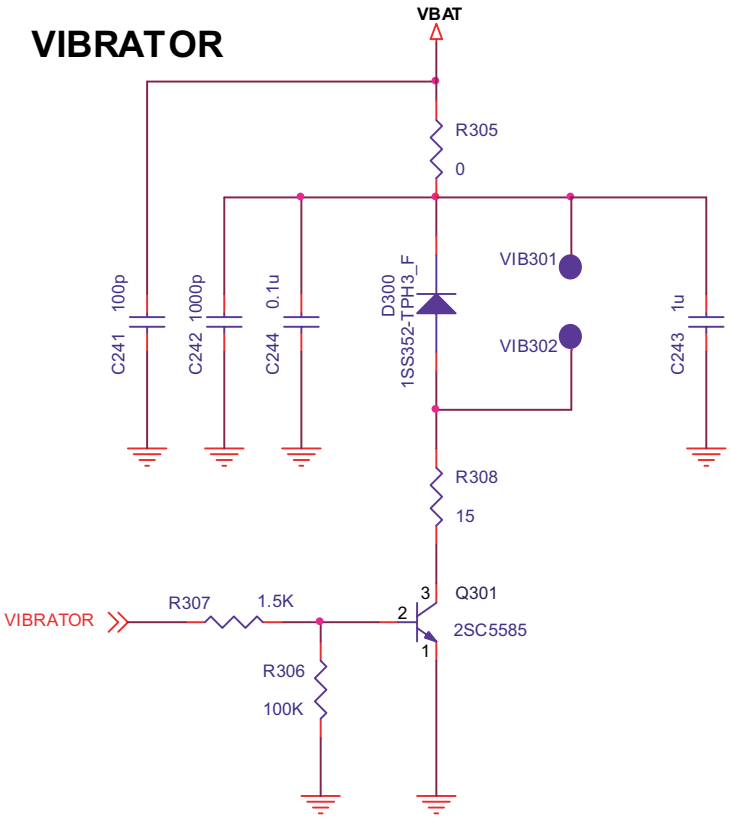


Figure 3-14: Vibrator Circuit

4. TROUBLE SHOOTING

4.1 RF components

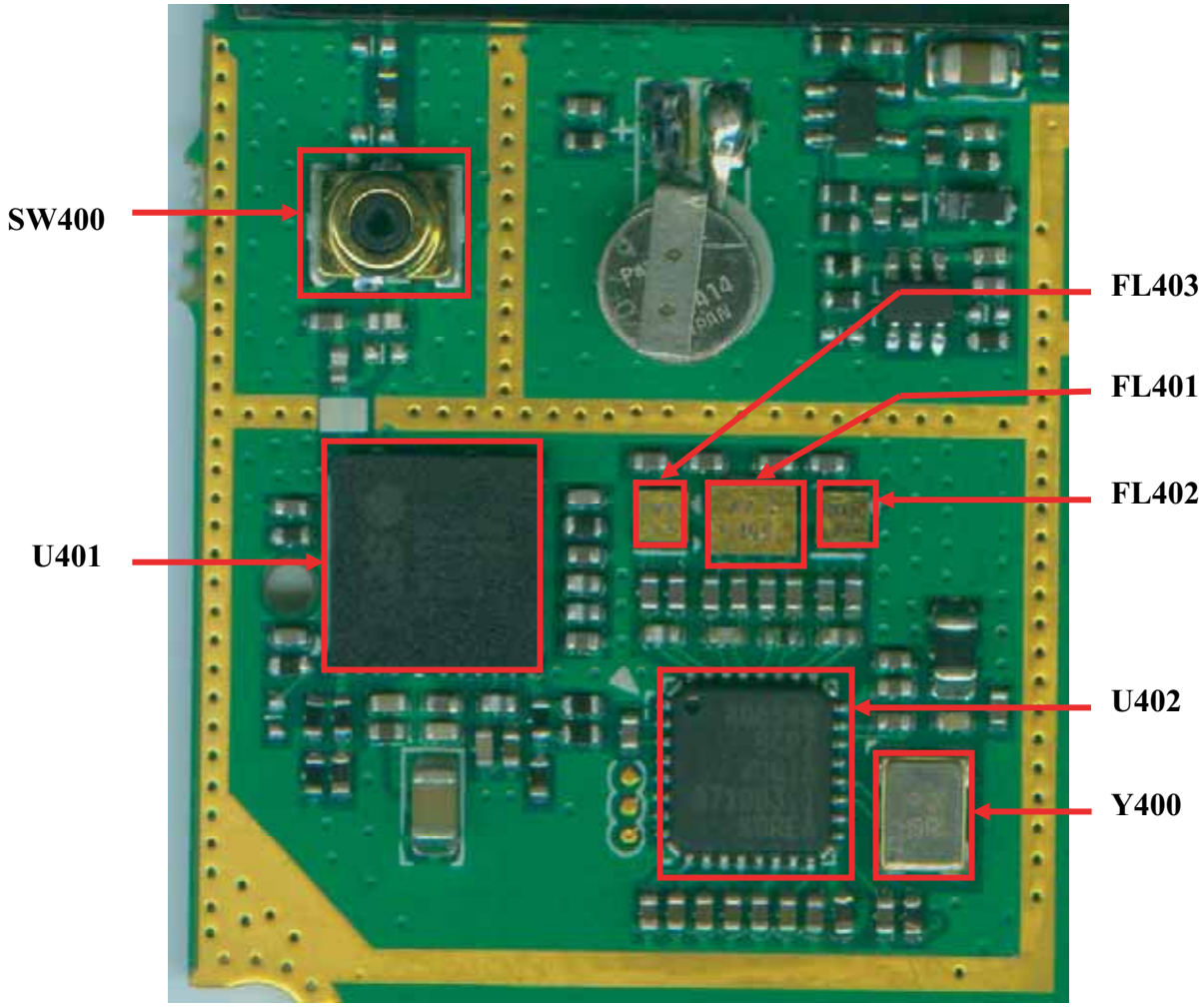
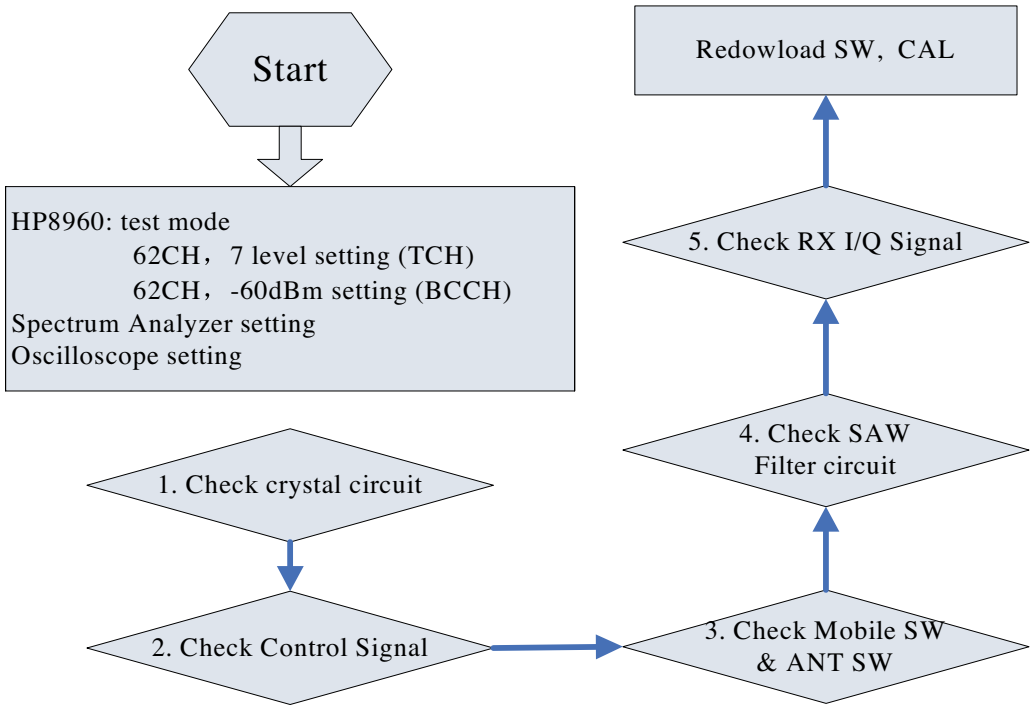


Figure 4-1

Table 4-1

Reference	Description	Reference	Description
U401	Power Amplifier module	FL401	SAW filter GSM&DCS
U402	Transceiver IC chip	FL402	SAW filter PCS
Y400	Crystal	FL403	SAW filter GSM850
SW400	Mobile Switch Module		

4.2 RX Trouble



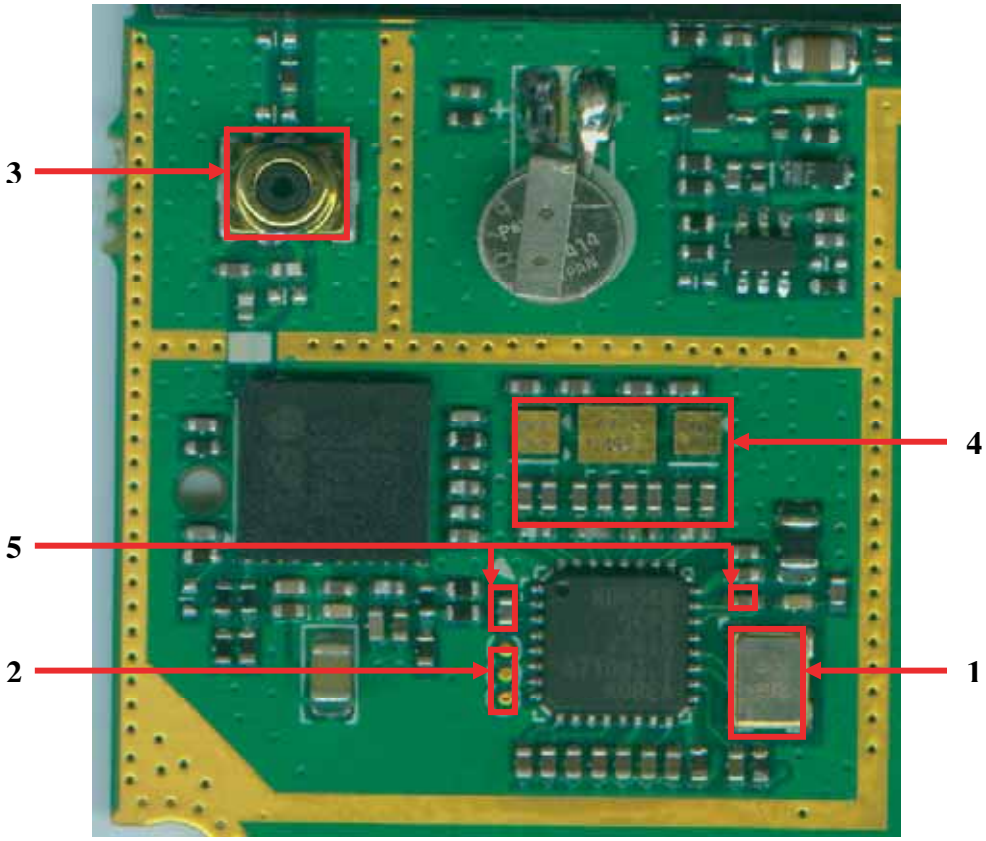
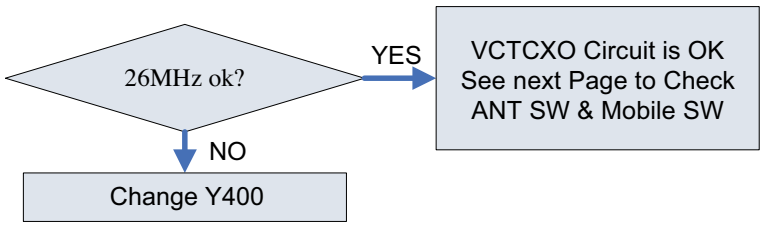
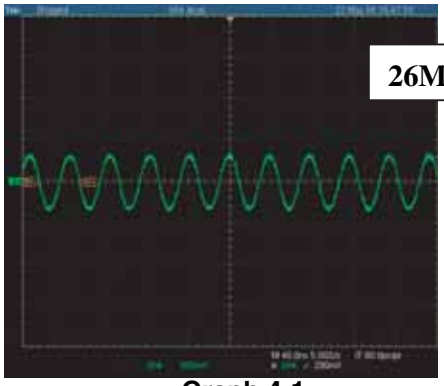


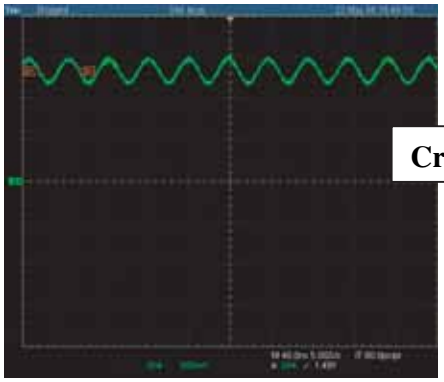
Figure 4-2

4.2.1 Check Crystal Circuit





Graph 4-1



Graph 4-2

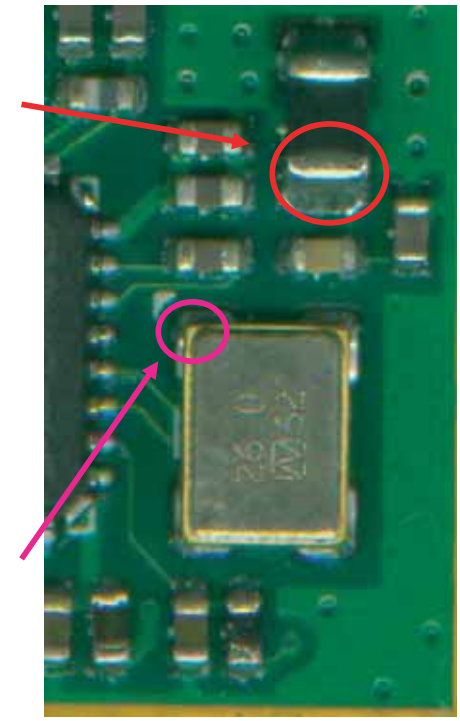
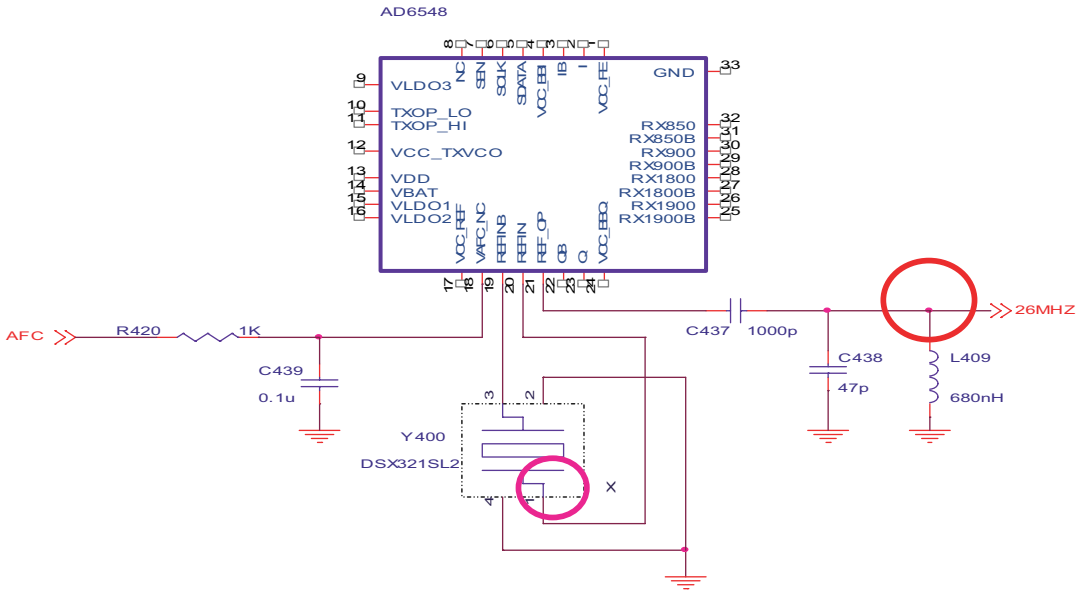
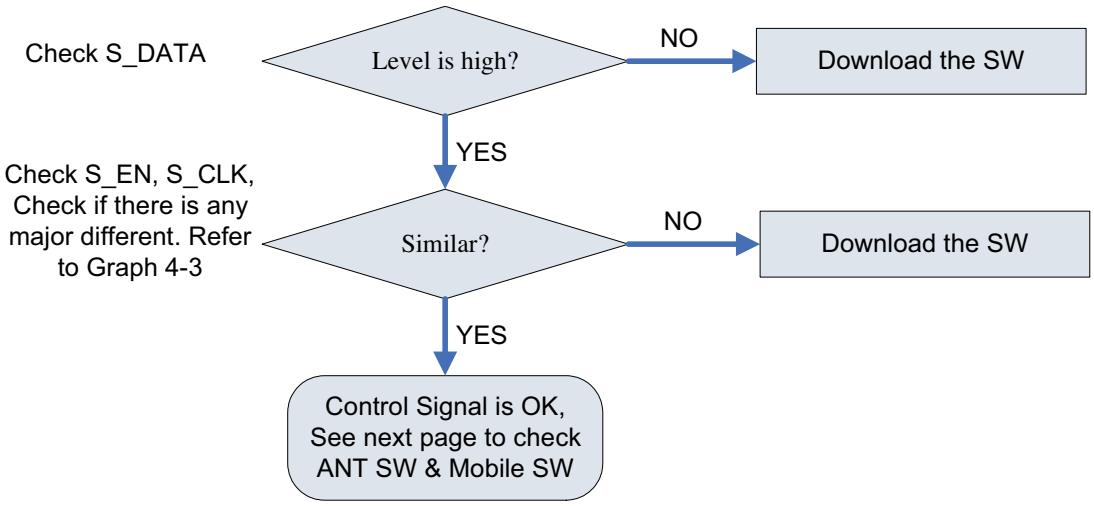


Figure 4-3



4.2.2 Check Control Signal



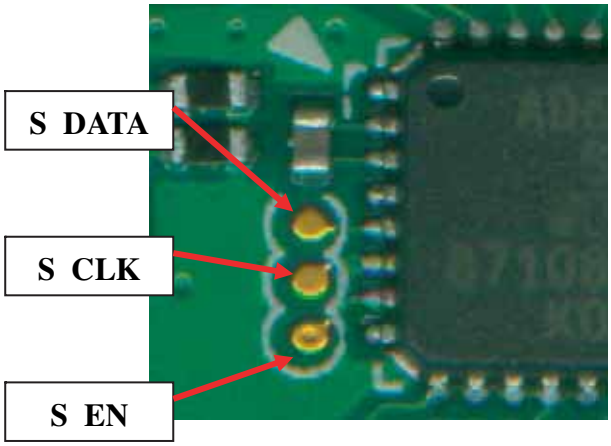
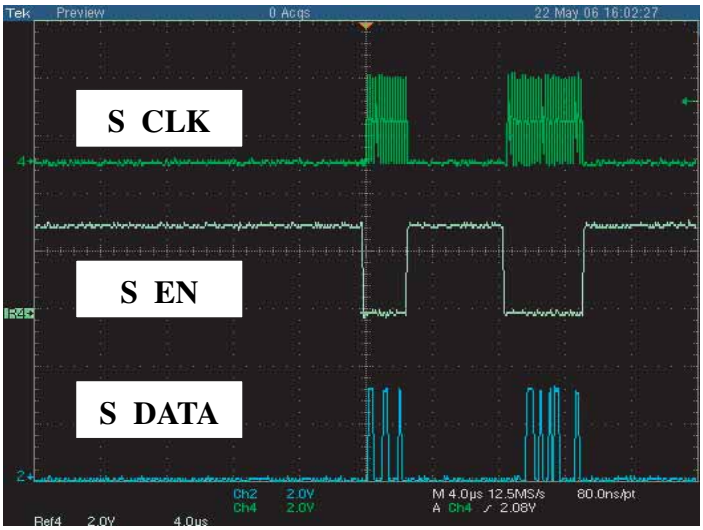


Figure 4-4



Graph 4-3

4.2.3 Check Mobile SW & ANT SW

Check Mobile SW

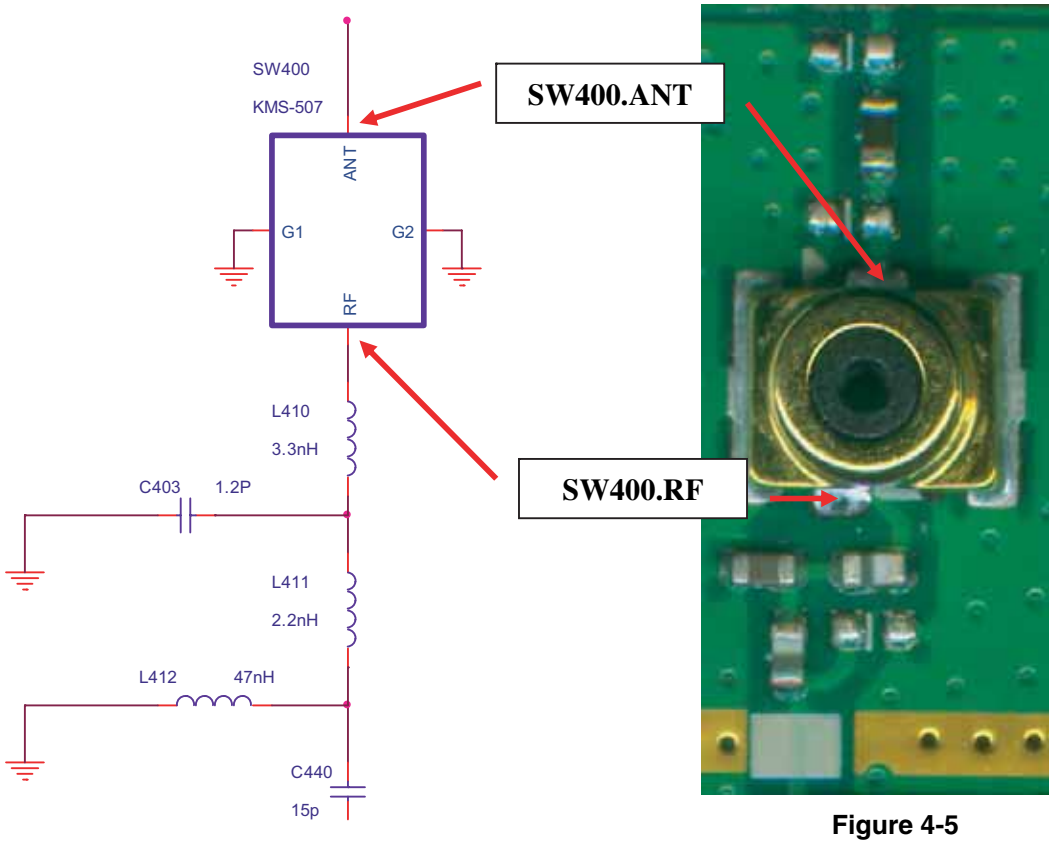
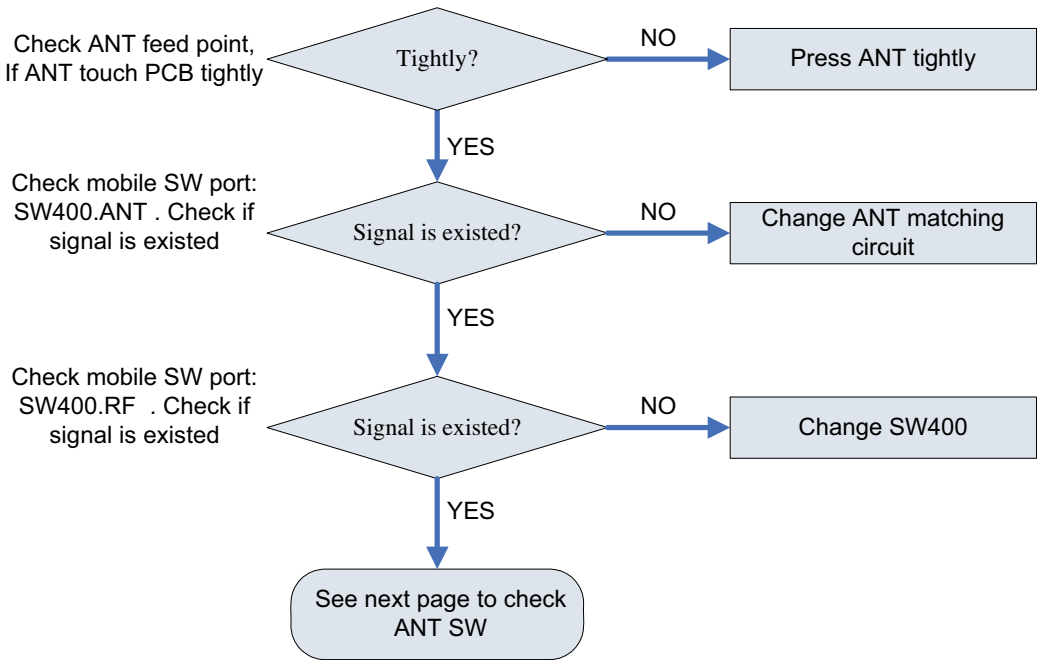


Figure 4-5



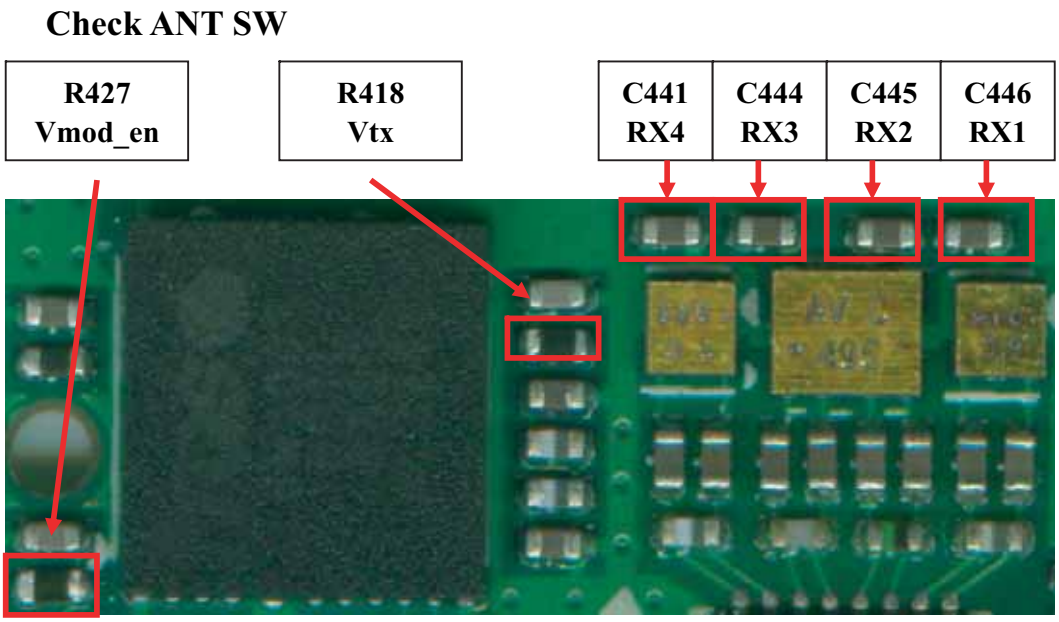
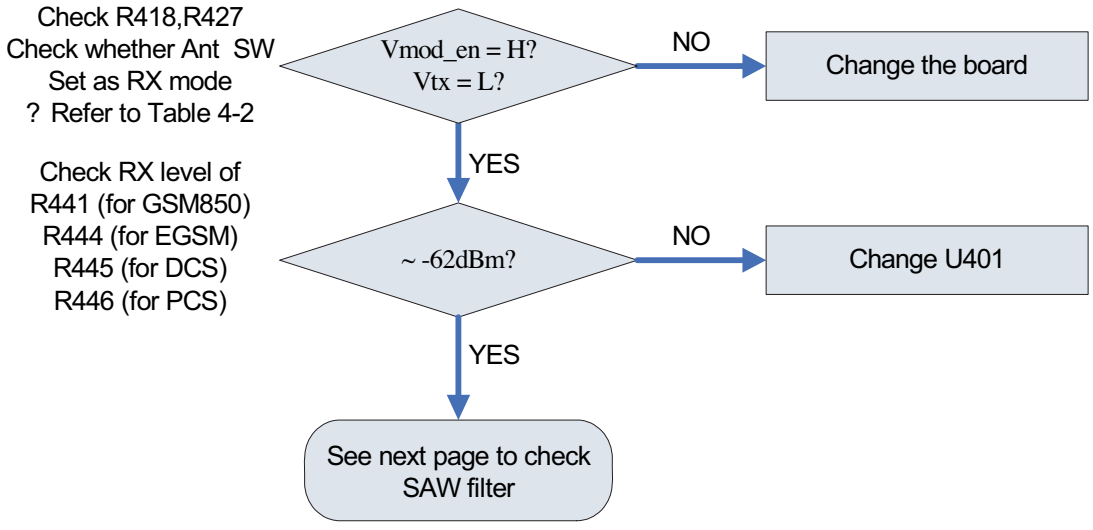


Figure 4-6

Operating Mode	Control Voltage			
	Vmod_en	Vtx	Vbs1	Vbs2
TX GSM 850/900	H	H	L	L
TX DCS/PCS	H	H	H	L
RX1	H	L	L	L
RX2	H	L	L	H
RX3	H	L	H	L
RX4	H	L	H	H
Sleep Mode	L	L	L	L

Figure 4-6



4.2.4 Check SAW filter

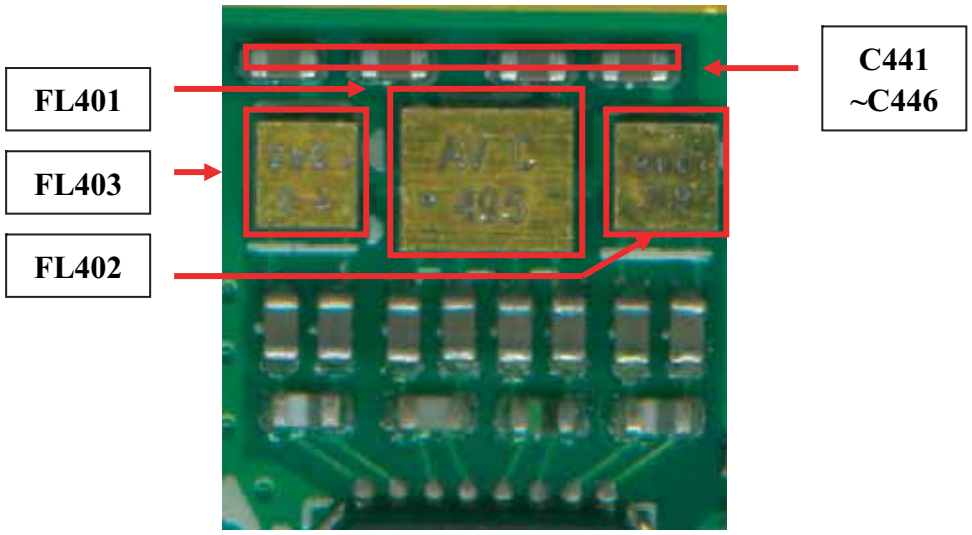
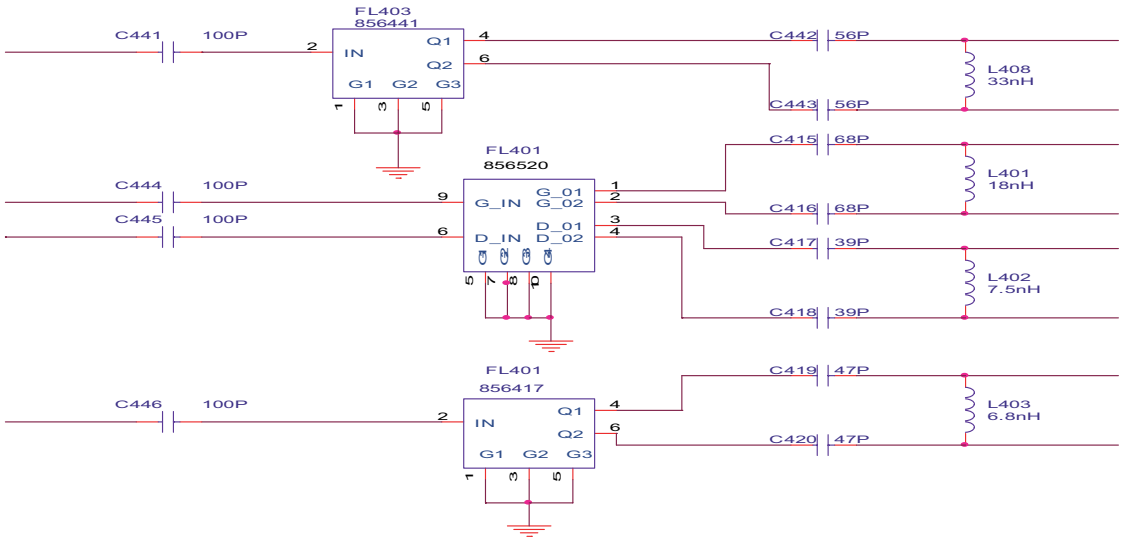
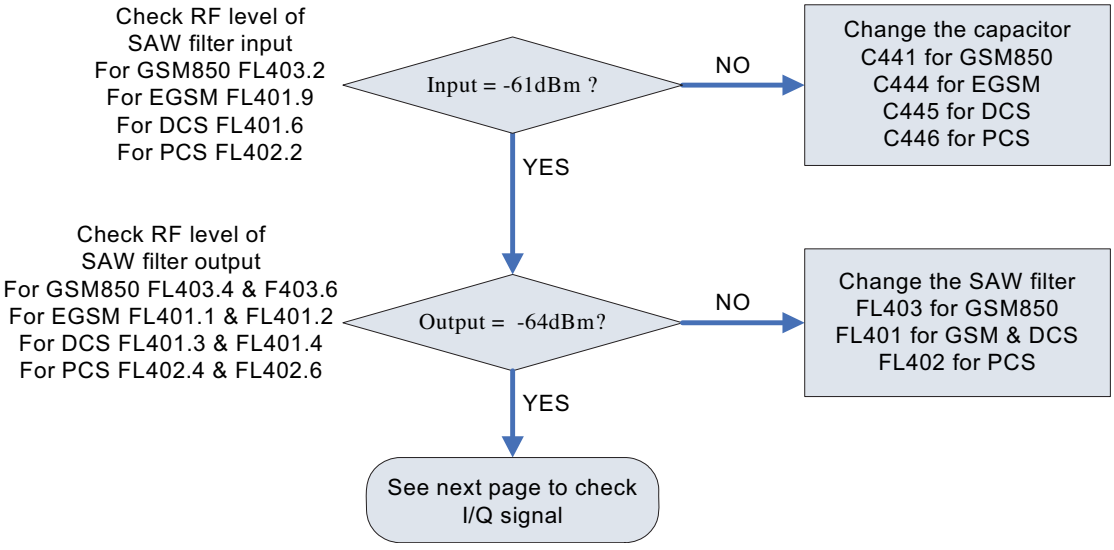


Figure 4-7





4.2.5 Check I/Q signal

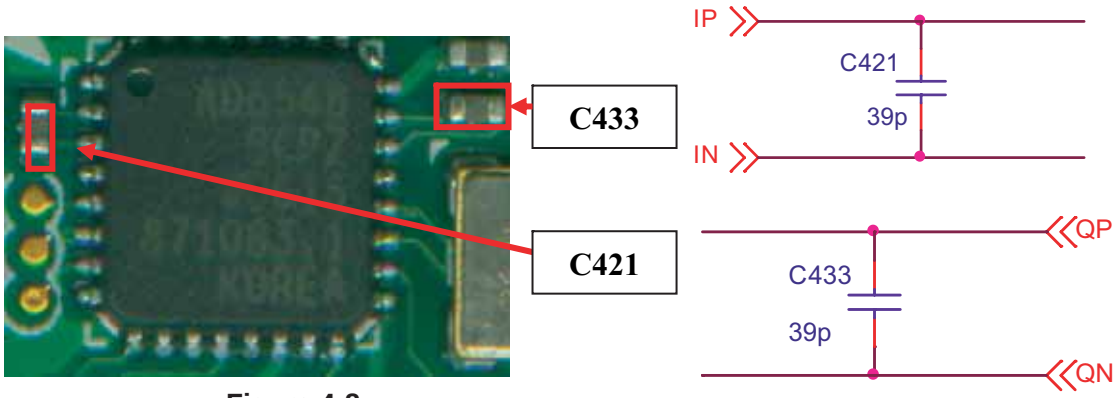
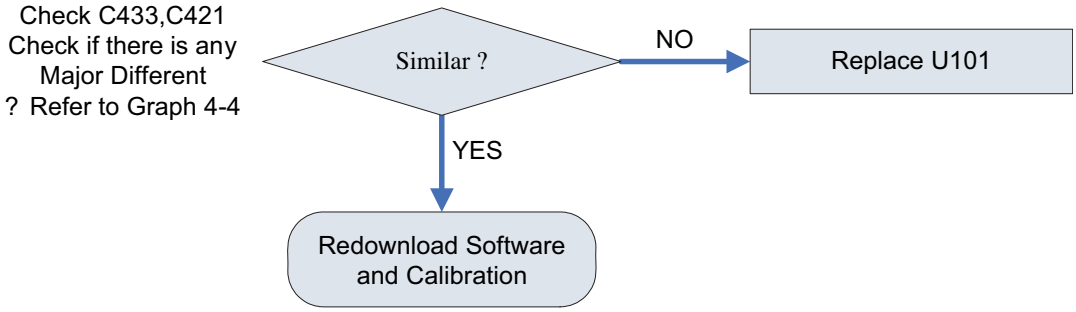
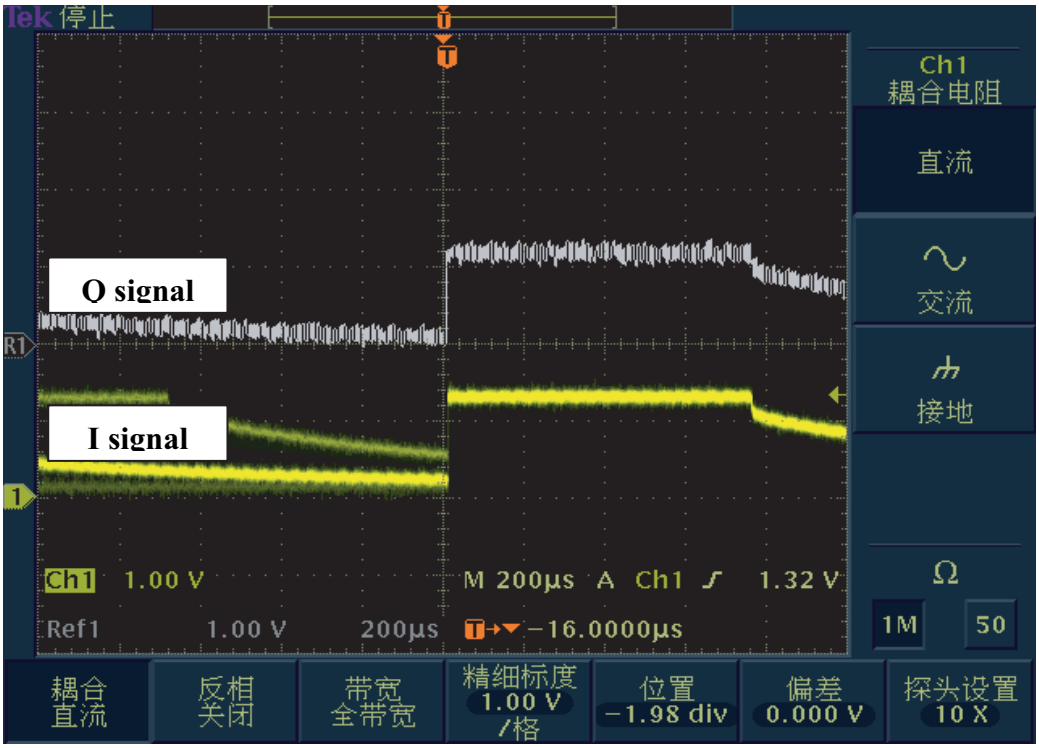


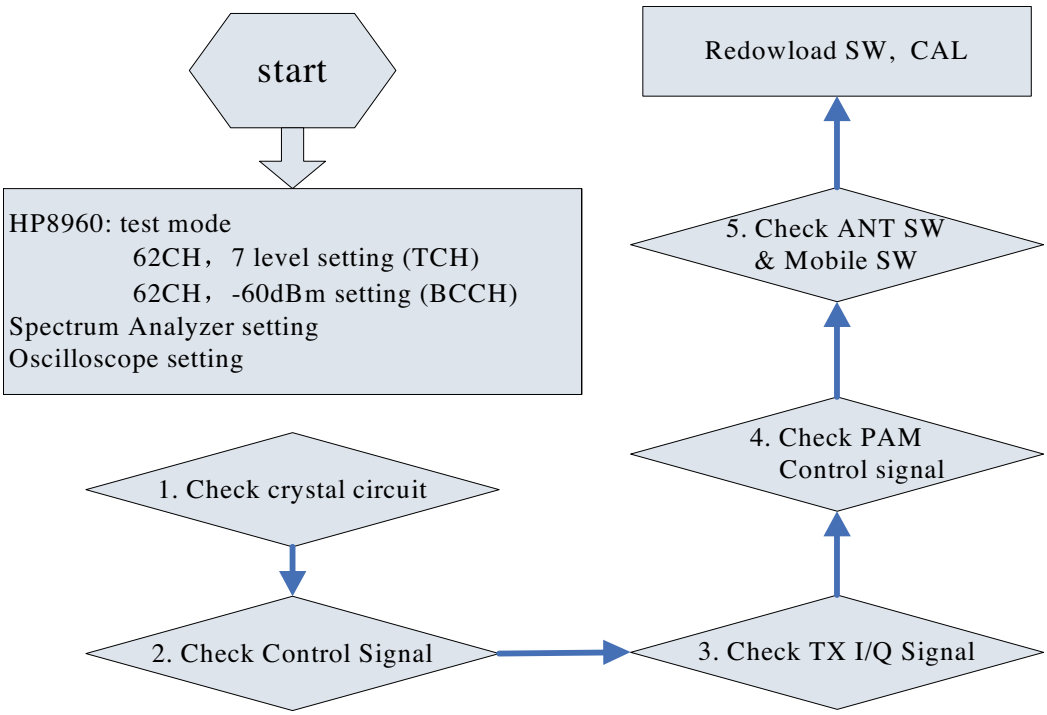
Figure 4-8





Graph 4-4

4.3 TX Trouble



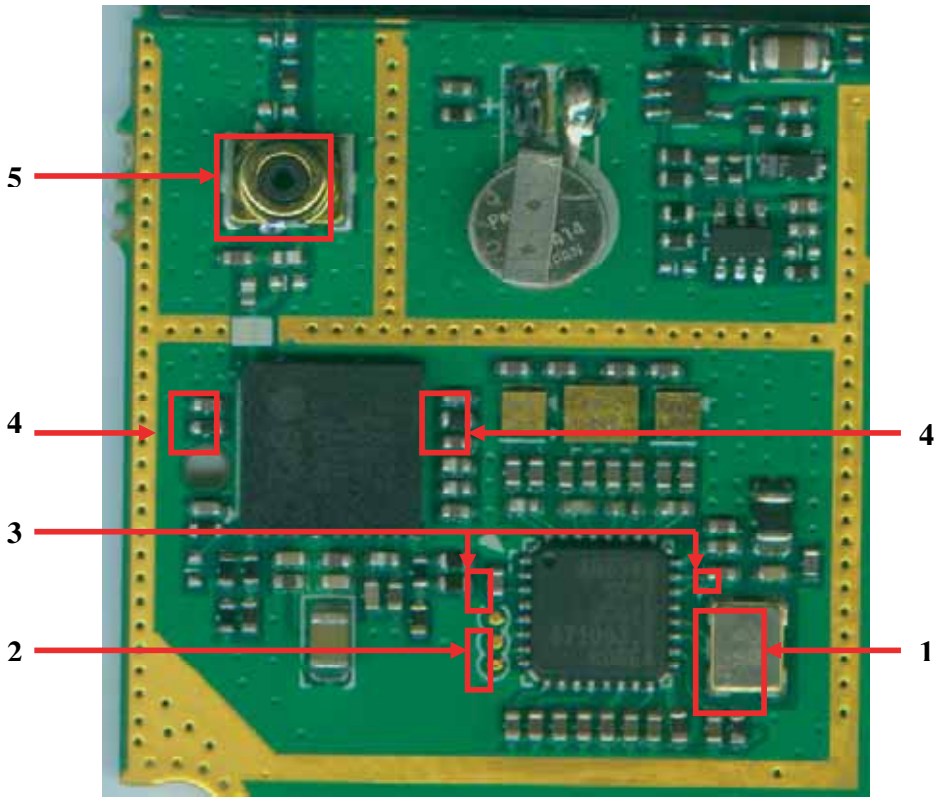
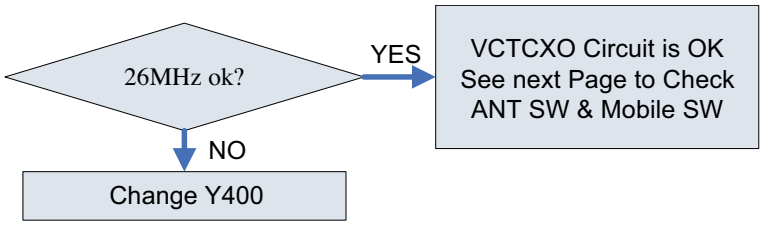
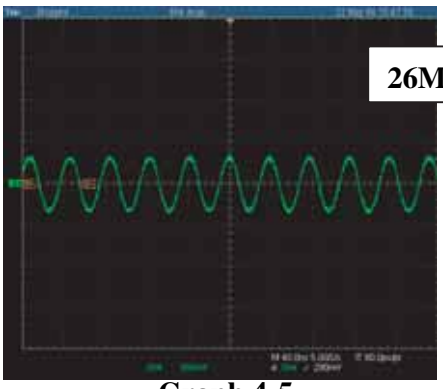


Figure 4-9

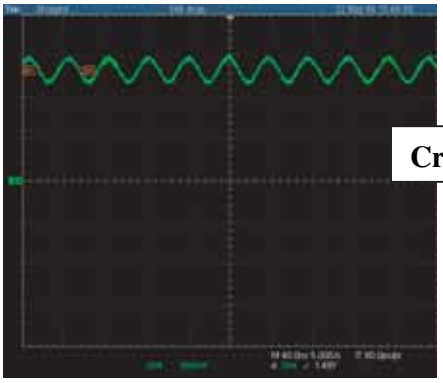
4.3.1 Check Crystal Circuit





26MHz signal

Graph 4-5



Crystal pin1

Graph 4-6

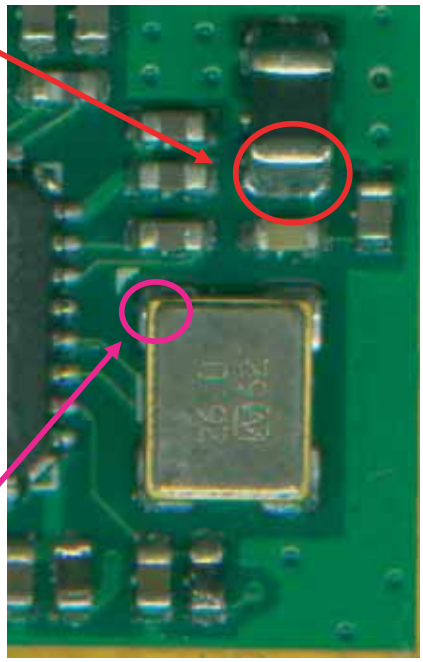
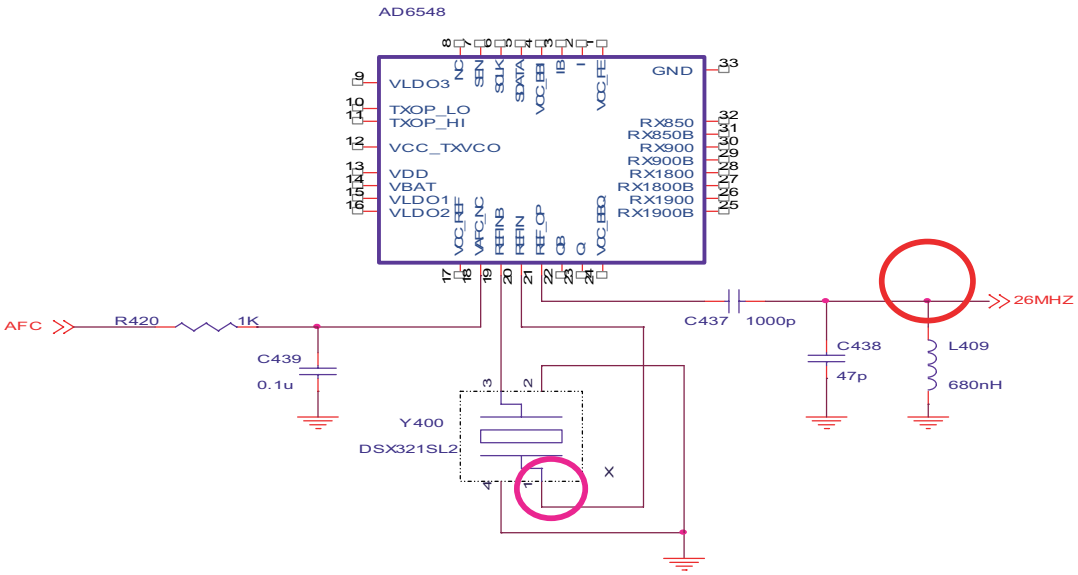
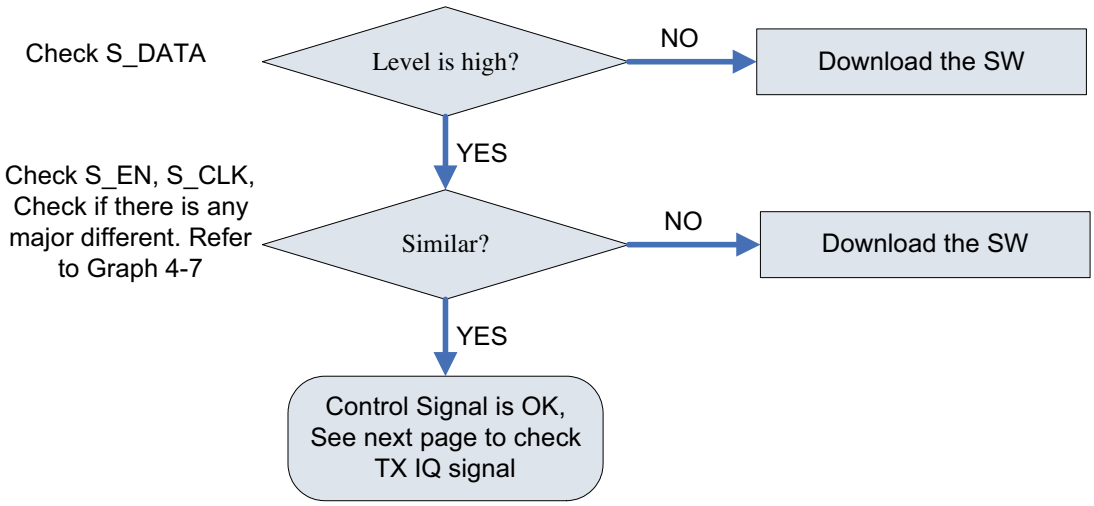


Figure 4-10



4.3.2 Check Control Signal



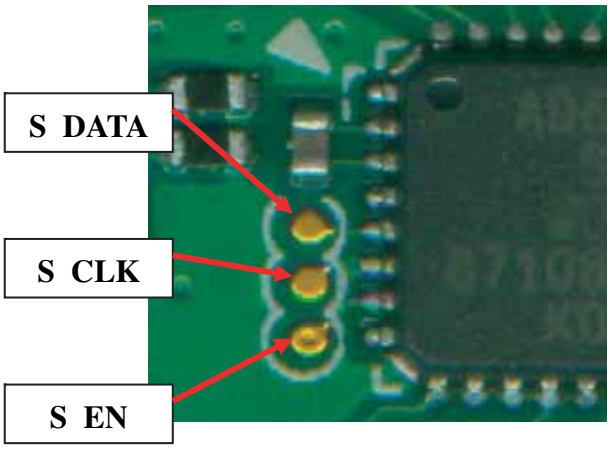
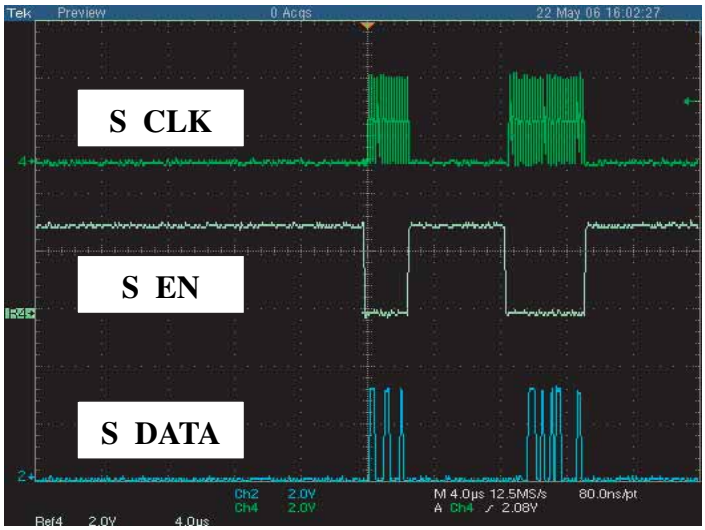


Figure 4-11



Graph 4-7

4.3.3 Check TX I/Q signal

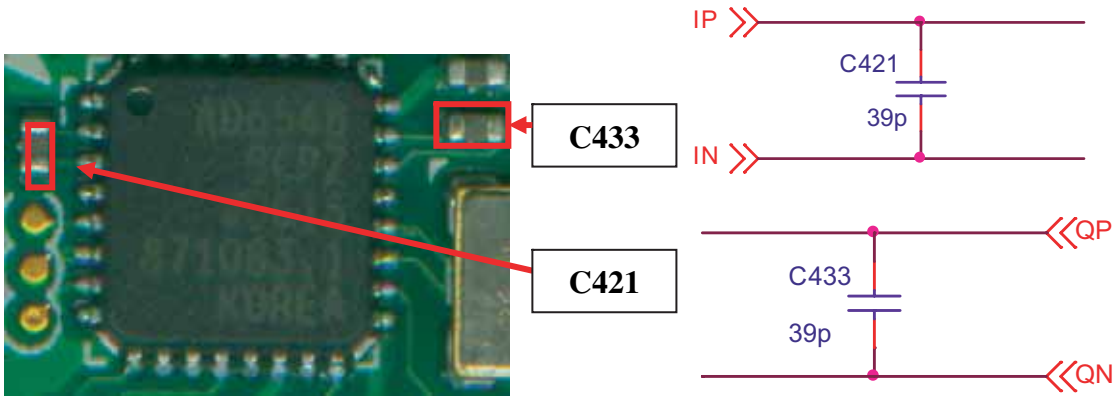
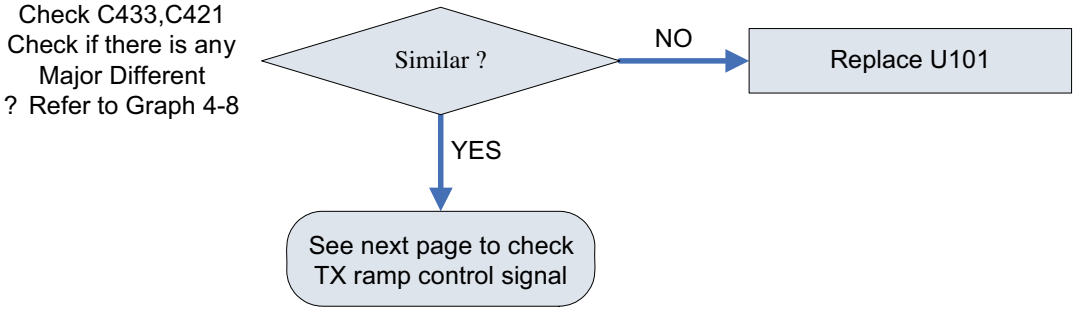
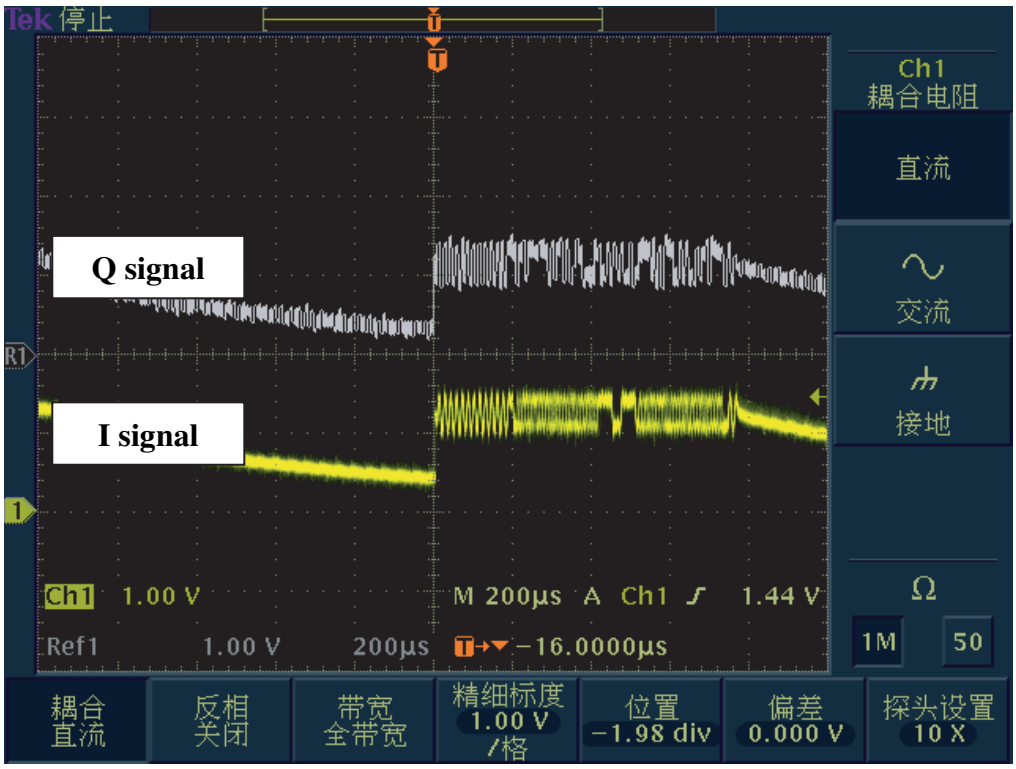


Figure 4-12





Graph 4-8

4.3.4 Check PAM control signal

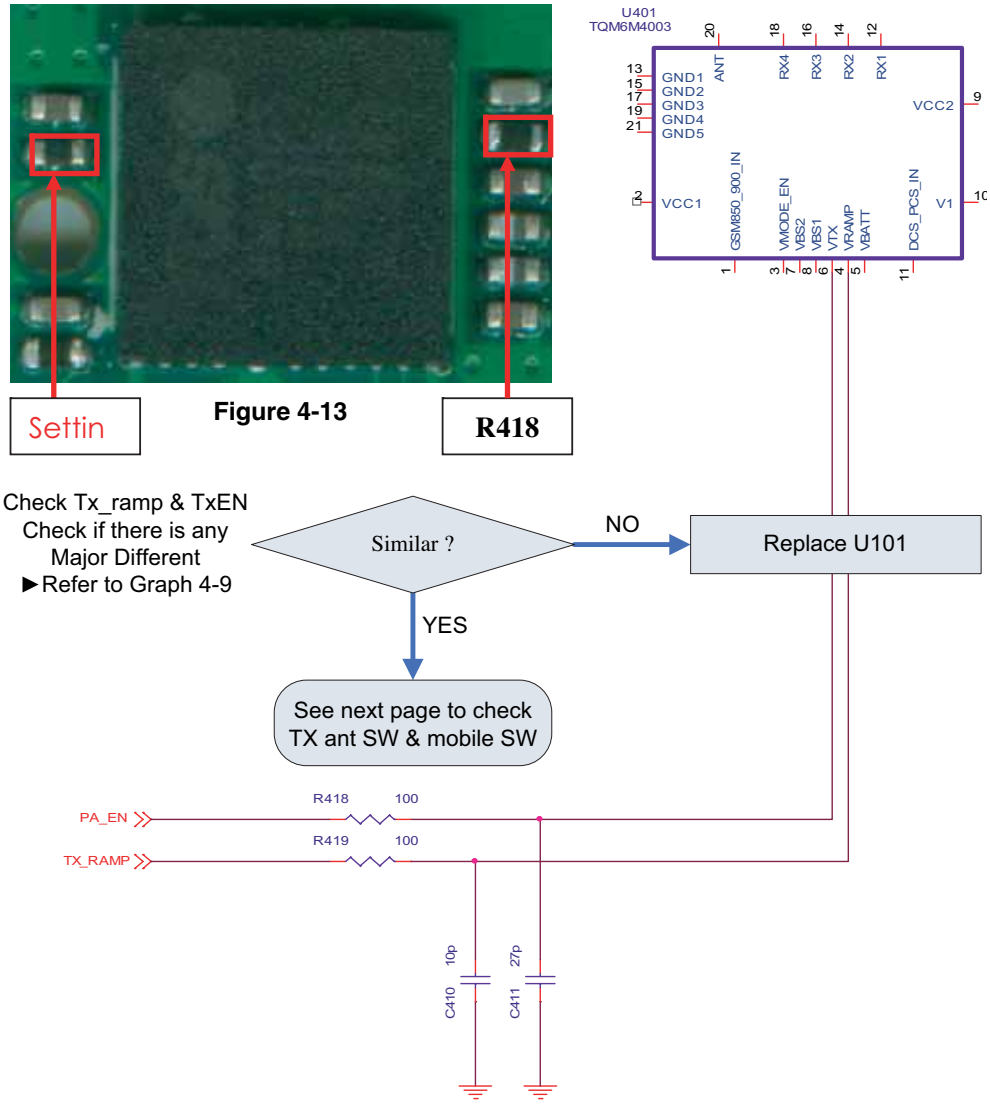
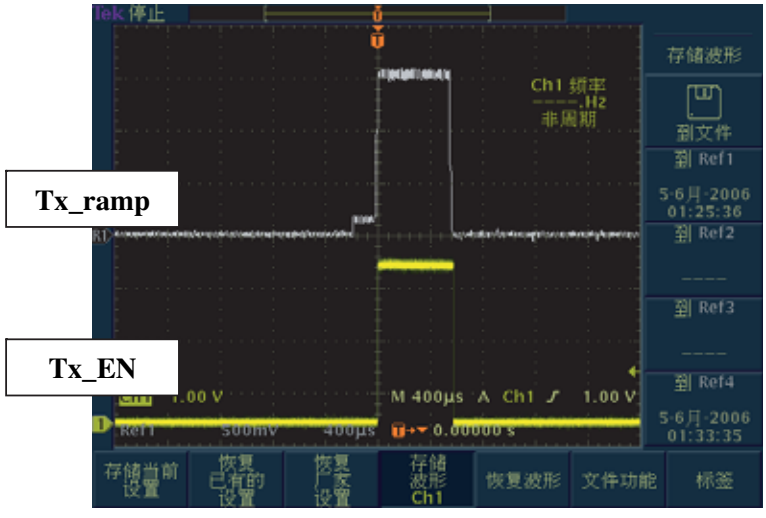


Figure 4-13



4.3.5 Check Mobile SW & ANT SW

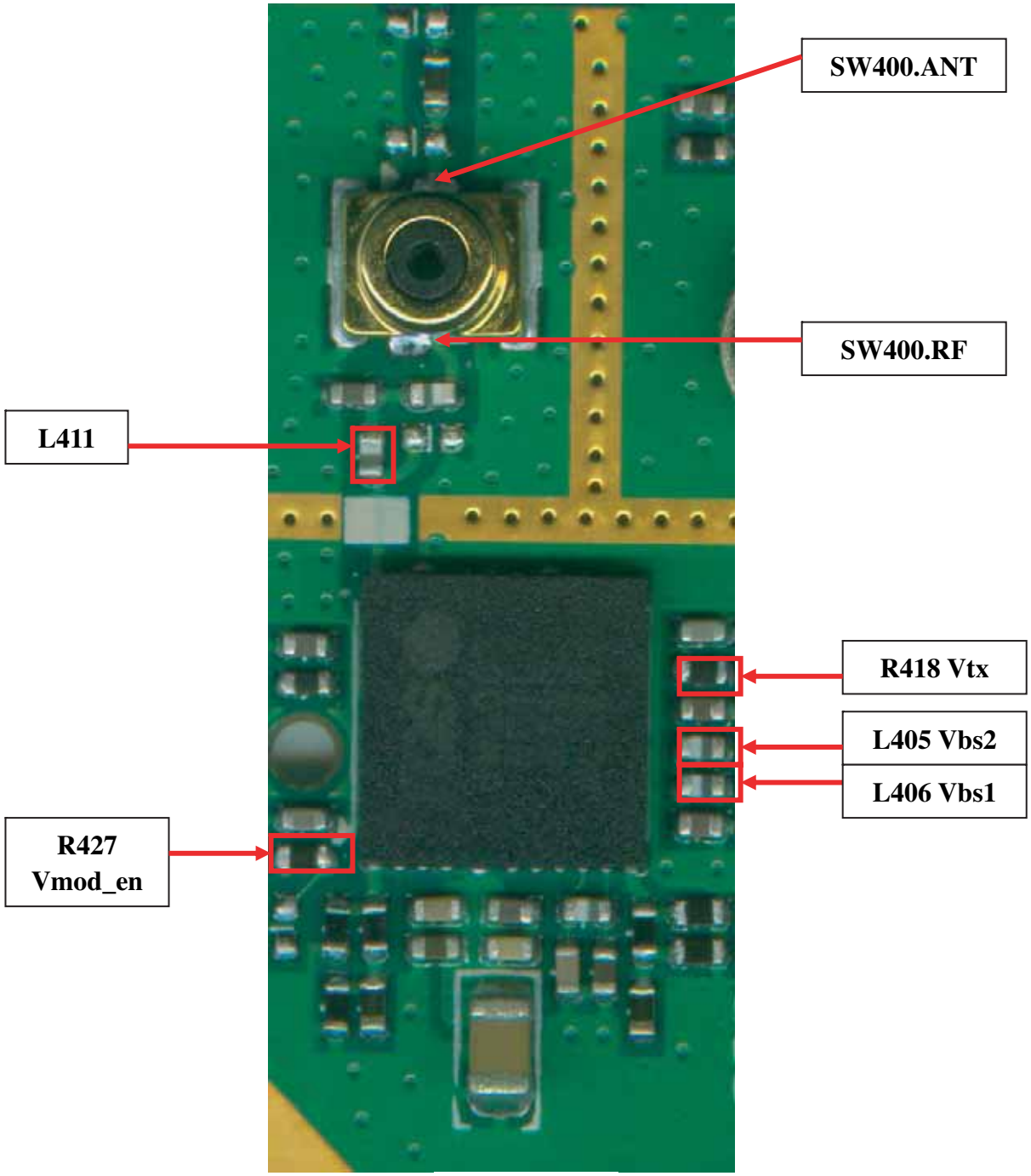
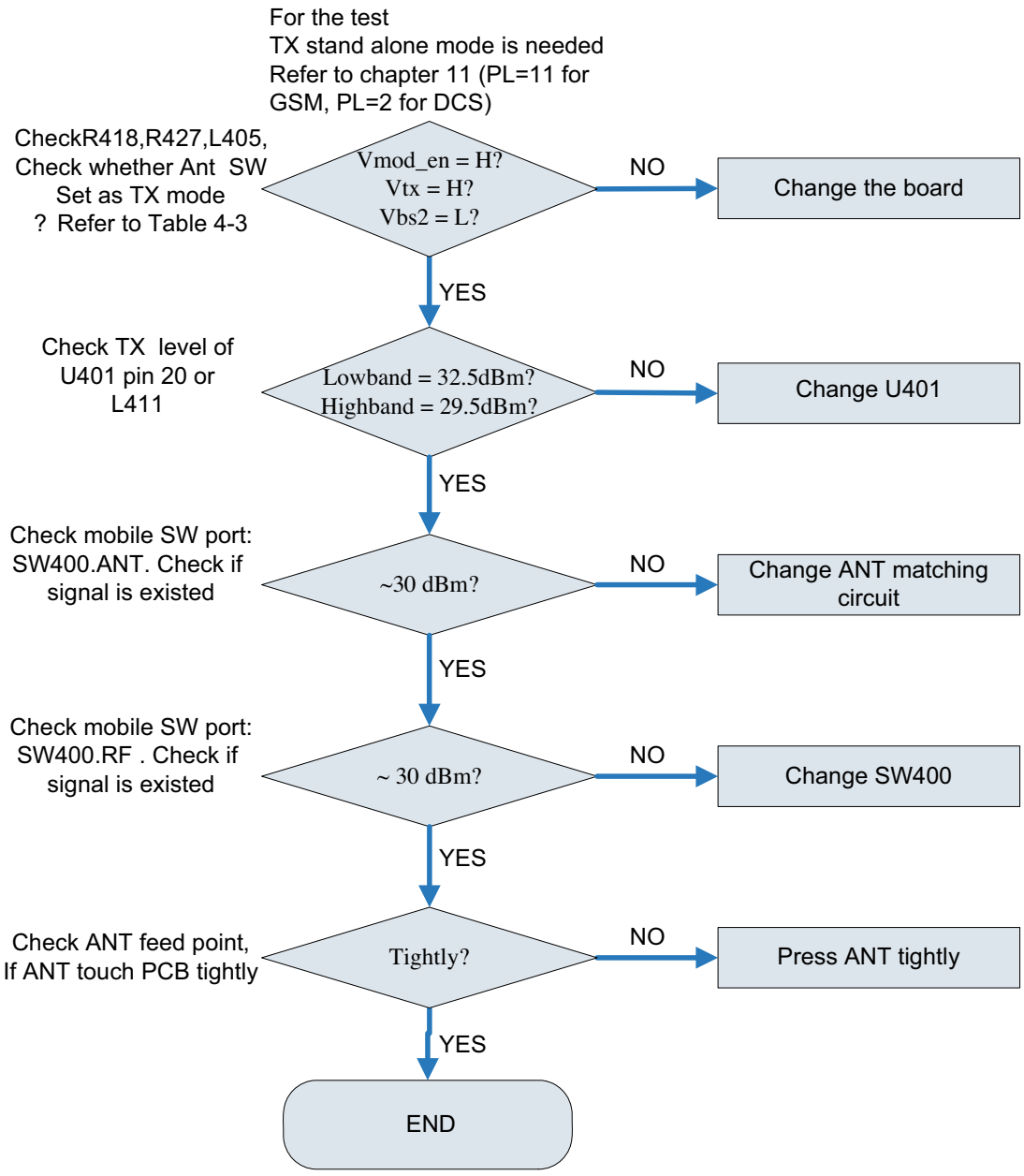


Figure 4-14

Table 4-3

Operating Mode	Control Voltage			
	Vmod_en	Vtx	Vbs1	Vbs2
TX GSM 850/900	H	H	L	L
TX DCS/PCS	H	H	H	L


For the test
TX stand alone mode is needed
Refer to chapter 11 (PL=11 for GSM, PL=2 for DCS)
CheckR418,R427,L405, Check whether Ant SW Set as TX mode ? Refer to Table 4-3
Vmod_en = H?
Vtx = H?
Vbs2 = L?
NO
Change the board
YES
Check TX level of U401 pin 20 or L411
Lowband = 32.5dBm?
Highband = 29.5dBm?
NO
Change U401
YES
Check mobile SW port: SW400.ANT. Check if signal is existed
~30 dBm?
NO
Change ANT matching circuit
YES
Check mobile SW port: SW400.RF . Check if signal is existed
~ 30 dBm?
NO
Change SW400
YES
Check ANT feed point, If ANT touch PCB tightly
Tightly?
NO
Press ANT tightly
YES
END

4.4 Power On Trouble

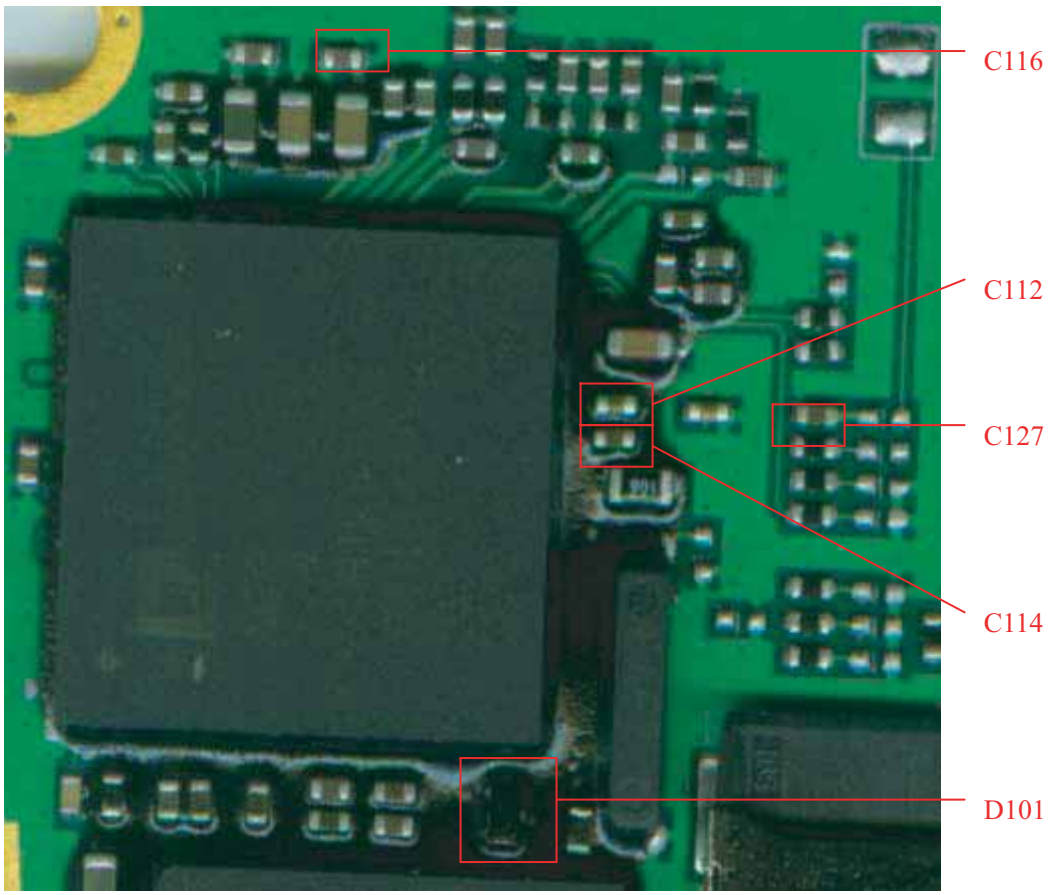
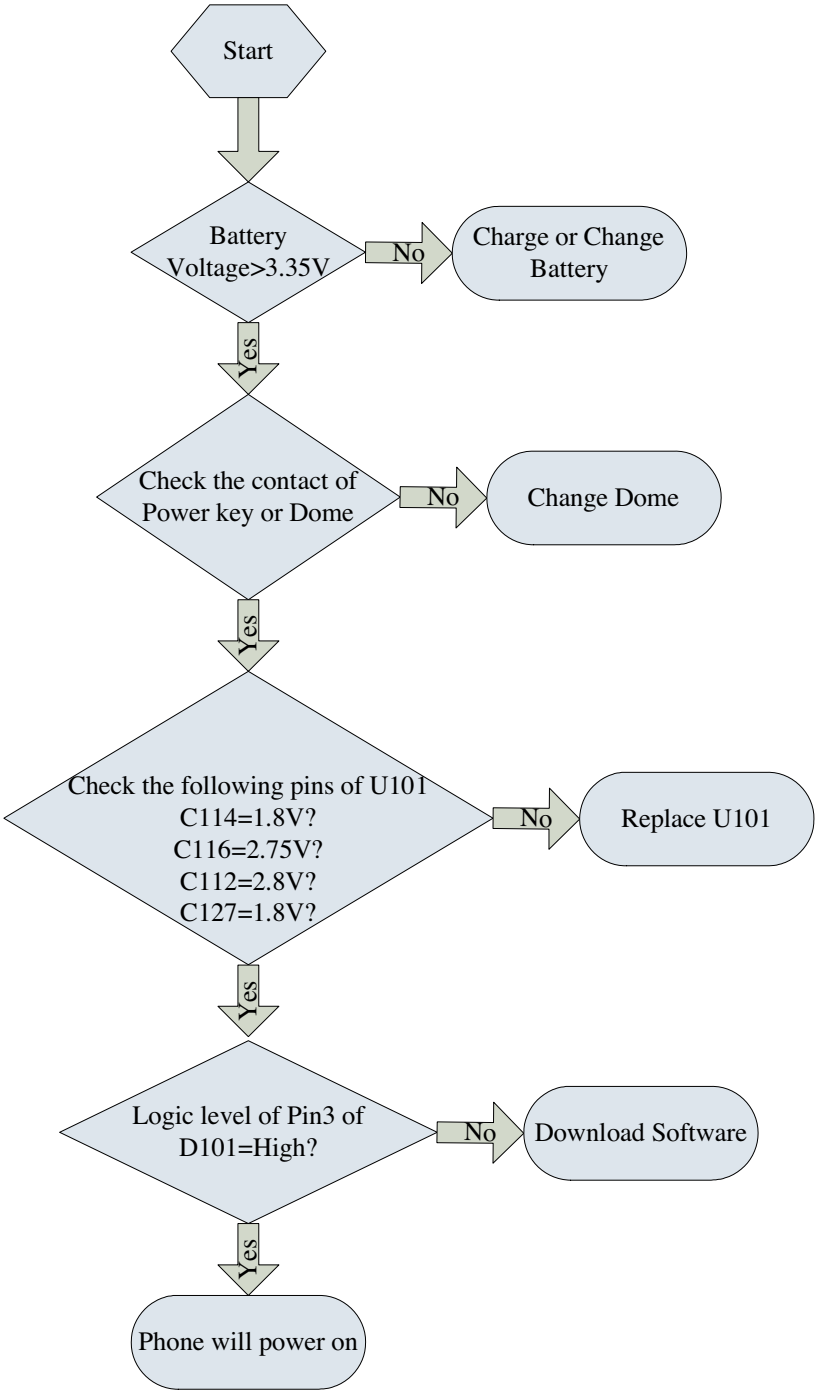


Figure 4-15

Check the Phone with the following process.


Start
Battery Voltage>3.35V
No
Charge or Change Battery
Yes
Check the contact of Power key or Dome
No
Change Dome
Yes
Check the following pins of U101
C114=1.8V?
C116=2.75V?
C112=2.8V?
C127=1.8V?
No
Replace U101
Yes
Logic level of Pin3 of D101=High?
No
Download Software
Yes
Phone will power on

4.5 Charging Trouble

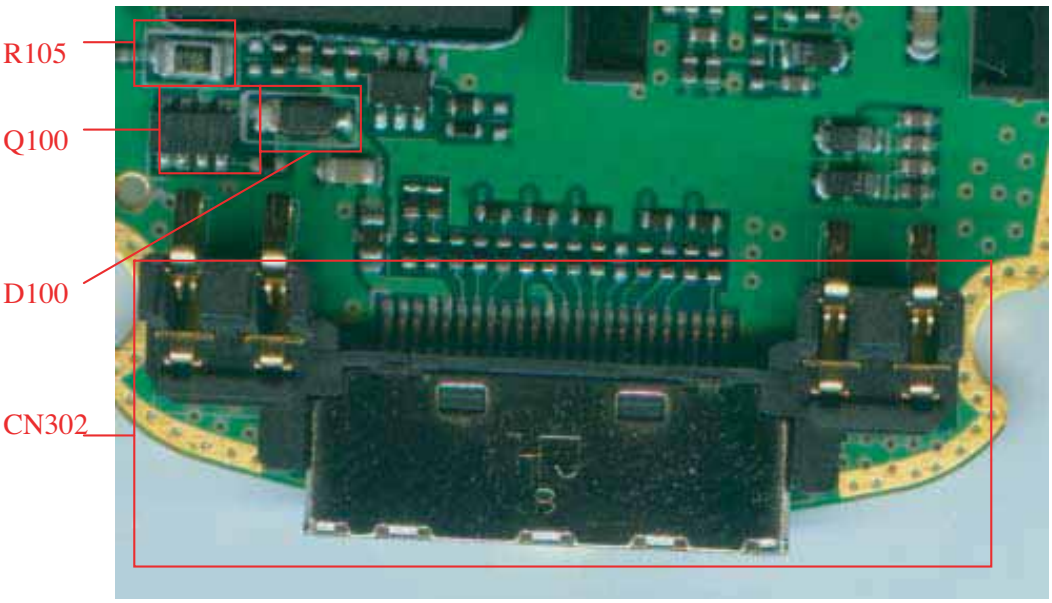
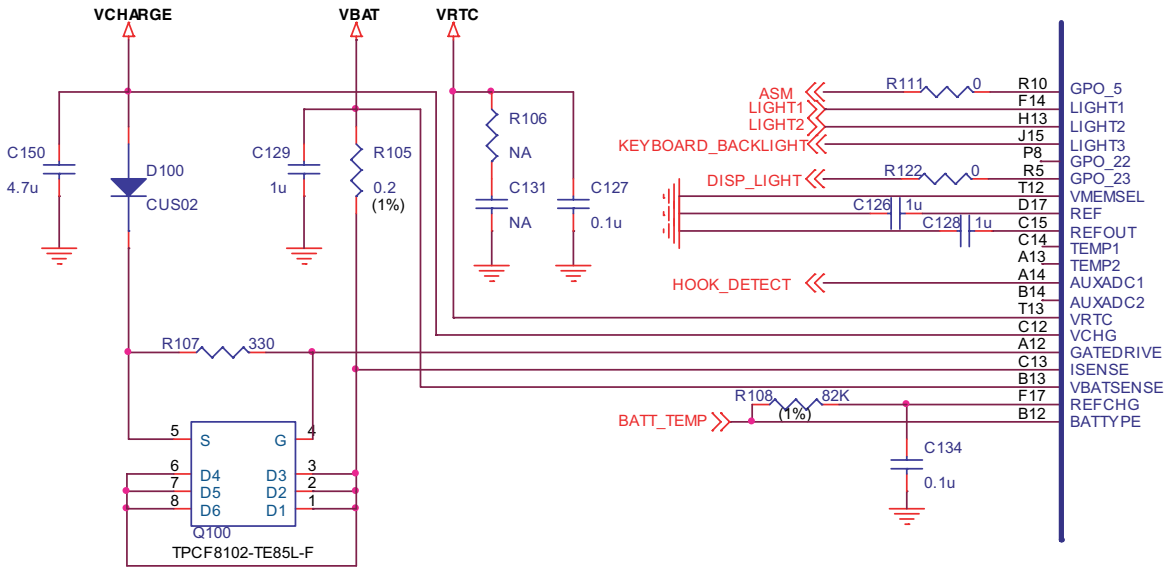
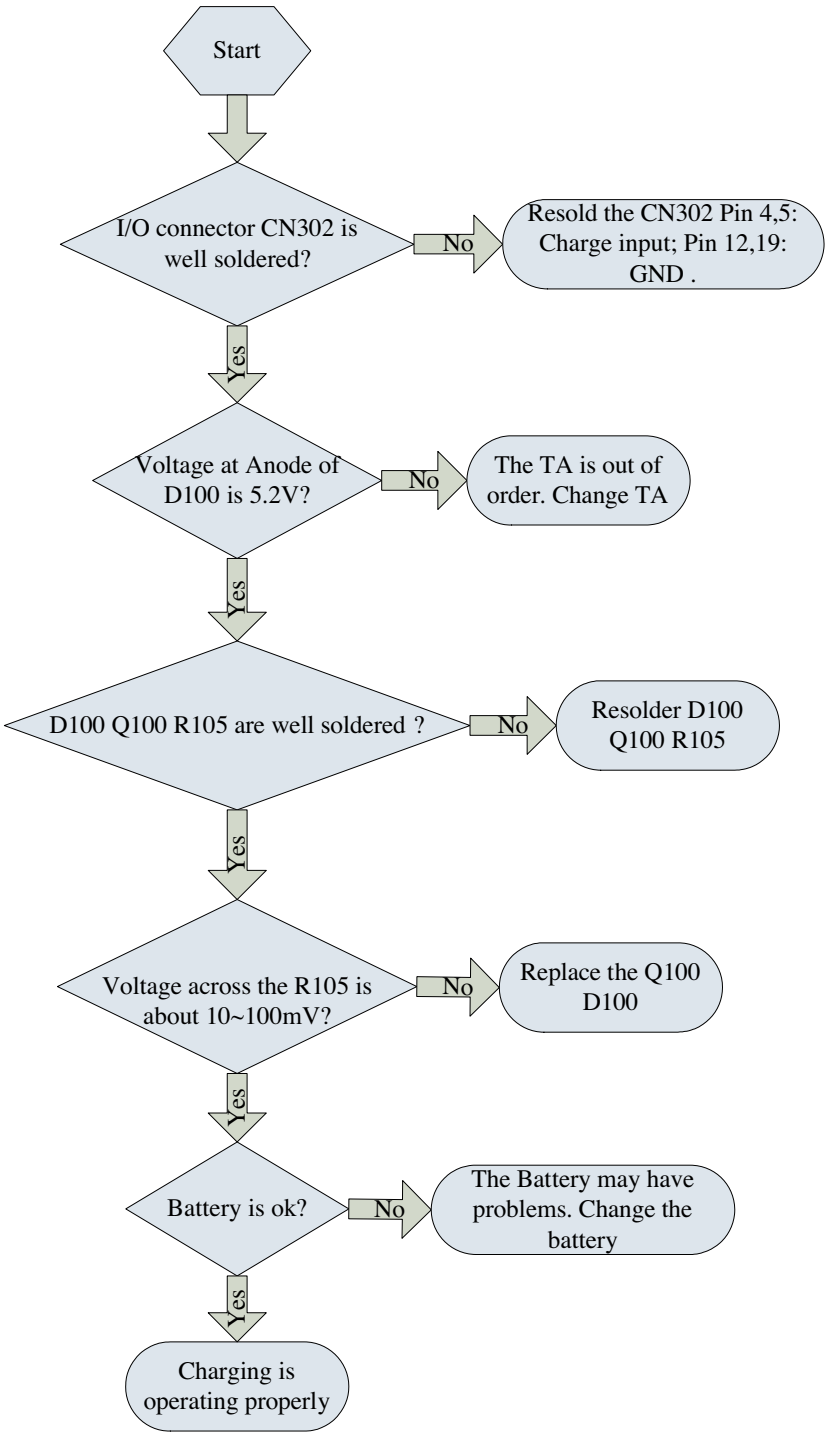


Figure 4-16

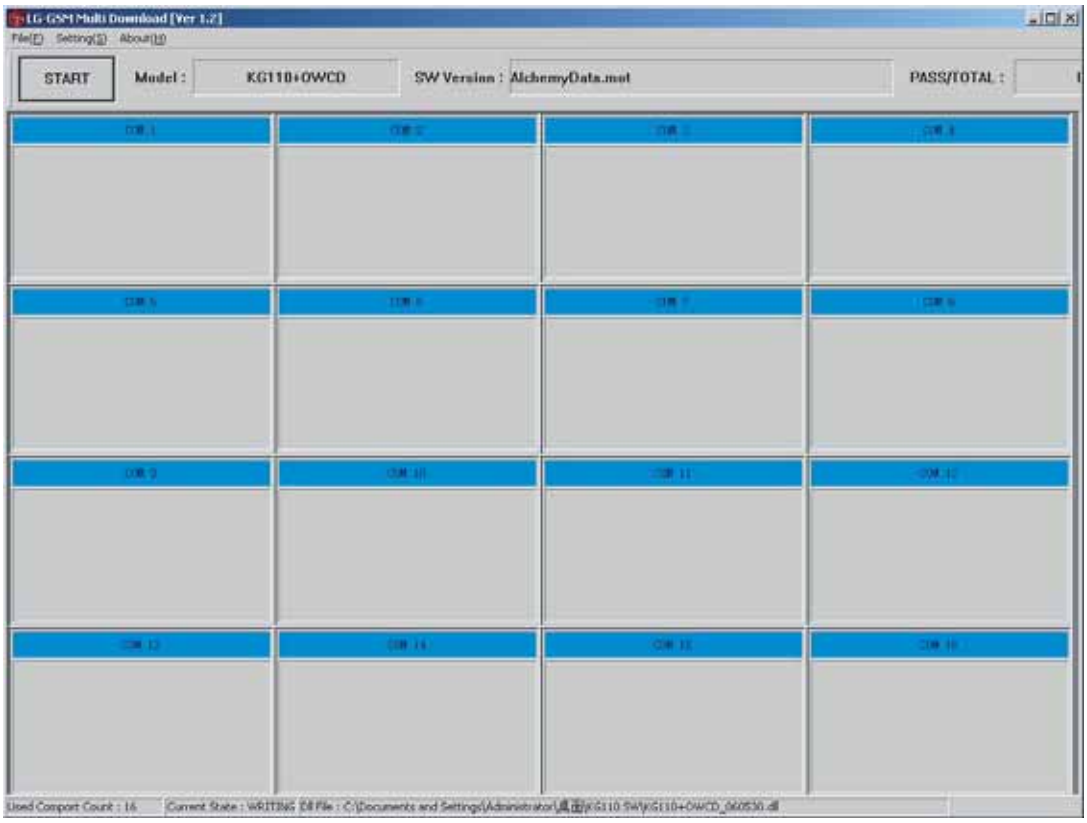



Start
I/O connector CN302 is well soldered?
No
Resold the CN302 Pin 4,5: Charge input; Pin 12,19: GND .
Yes
Voltage at Anode of D100 is 5.2V?
No
The TA is out of order. Change TA
Yes
D100 Q100 R105 are well soldered ?
No
Resolder D100 Q100 R105
Yes
Voltage across the R105 is about 10~100mV?
No
Replace the Q100 D100
Yes
Battery is ok?
No
The Battery may have problems. Change the battery
Yes
Charging is operating properly

4.6 Download

Download with GSMULTI47

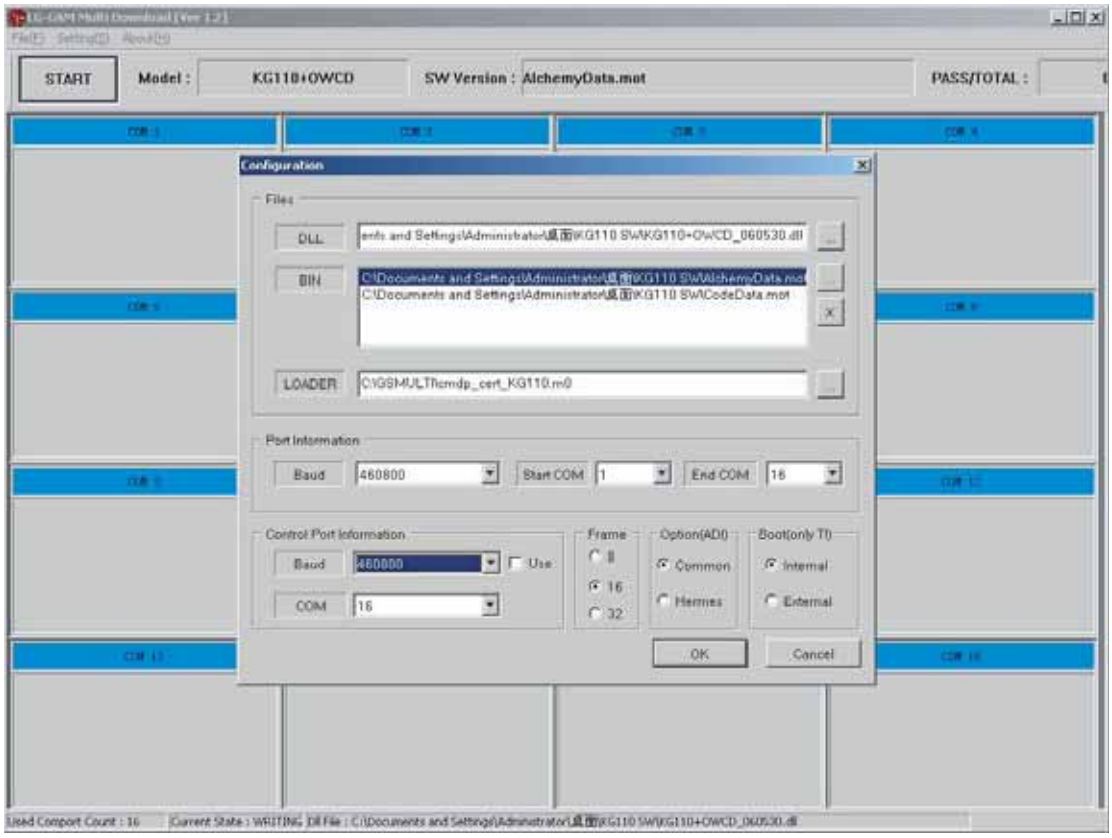
Firstly, run the “GSMULTI” shown as the following picture.



Then turn the switch on the multidownloader to “ADI”.
Thereafter, you should configure the setting by press the tab “Setting -> Configuration”.

See the following picture for detail:

4. TROUBLE SHOOTING



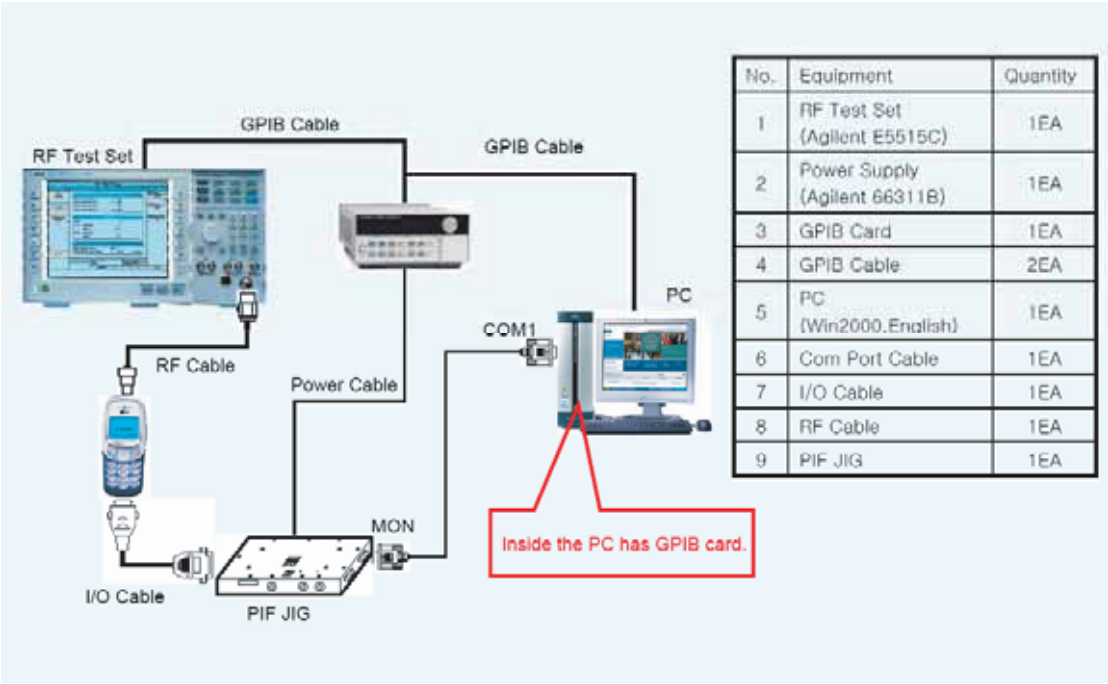
Firstly, for initial download, you should choose the .dll file.
Then choose the .mot file you want to download.
The loader should be set as :Cmd.mo;
According to you equipment configuration, please choose the right Baund rate your equipment support.

For “Option(ADI)”, “Common” should be chosen.
After confirm by press “OK”, you can download by connect your phone with the cable of multidownloader.

4.7 Calibration

Calibration with Hotkimchi

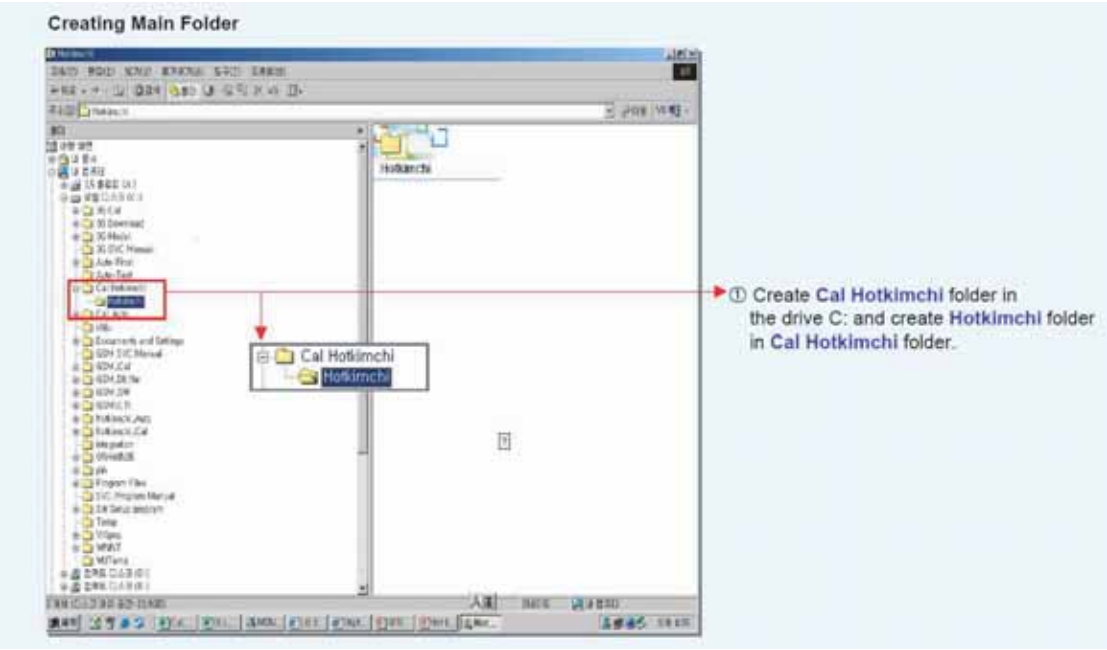
4.7.1 Equipment Setup



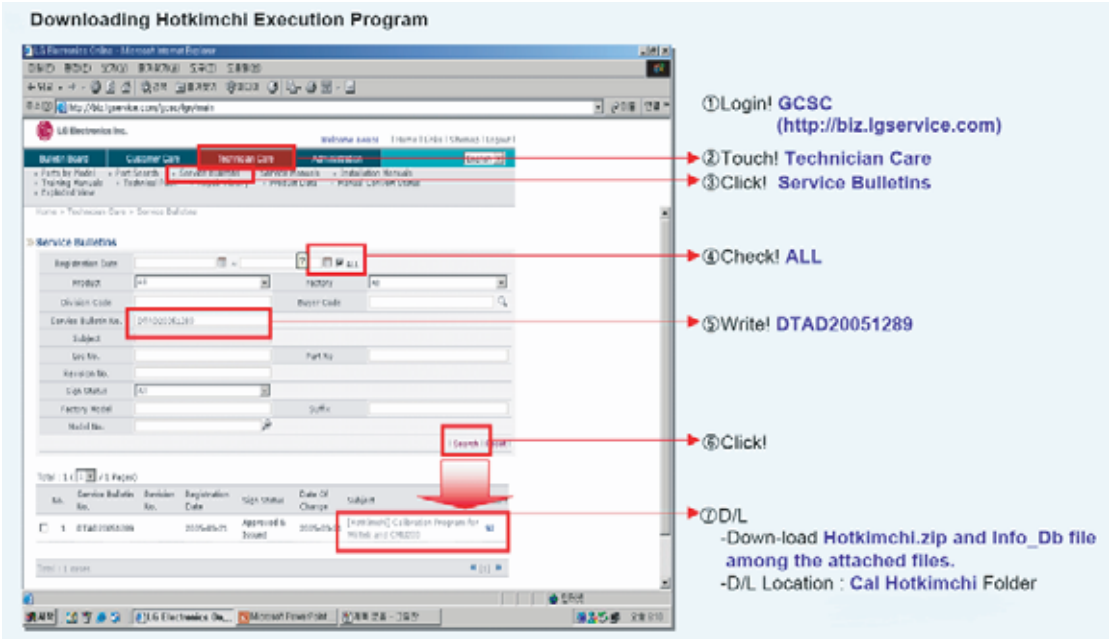
No.	Equipment	Quantity
1	RF Test Set (Agilent E5515C)	1EA
2	Power Supply (Agilent 66311B)	1EA
3	GPIB Card	1EA
4	GPIB Cable	2EA
5	PC (Win2000.English)	1EA
6	Com Port Cable	1EA
7	I/O Cable	1EA
8	RF Cable	1EA
9	PIF JIG	1EA

4.7.2 Setup

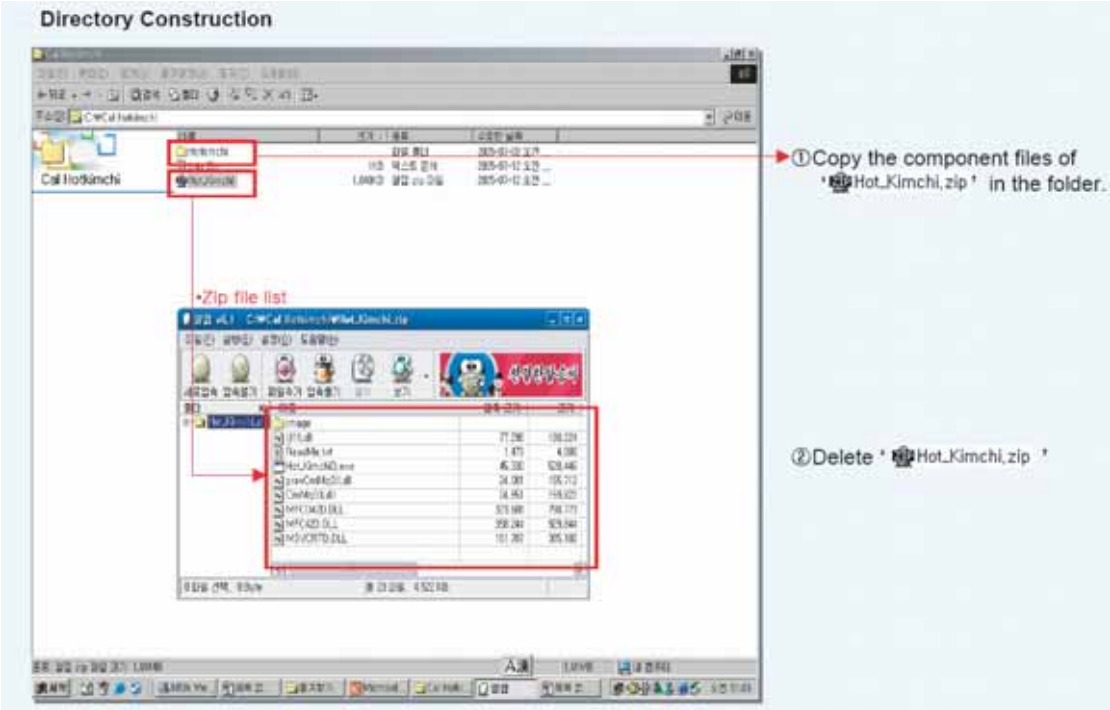
1) Creating Main Folder



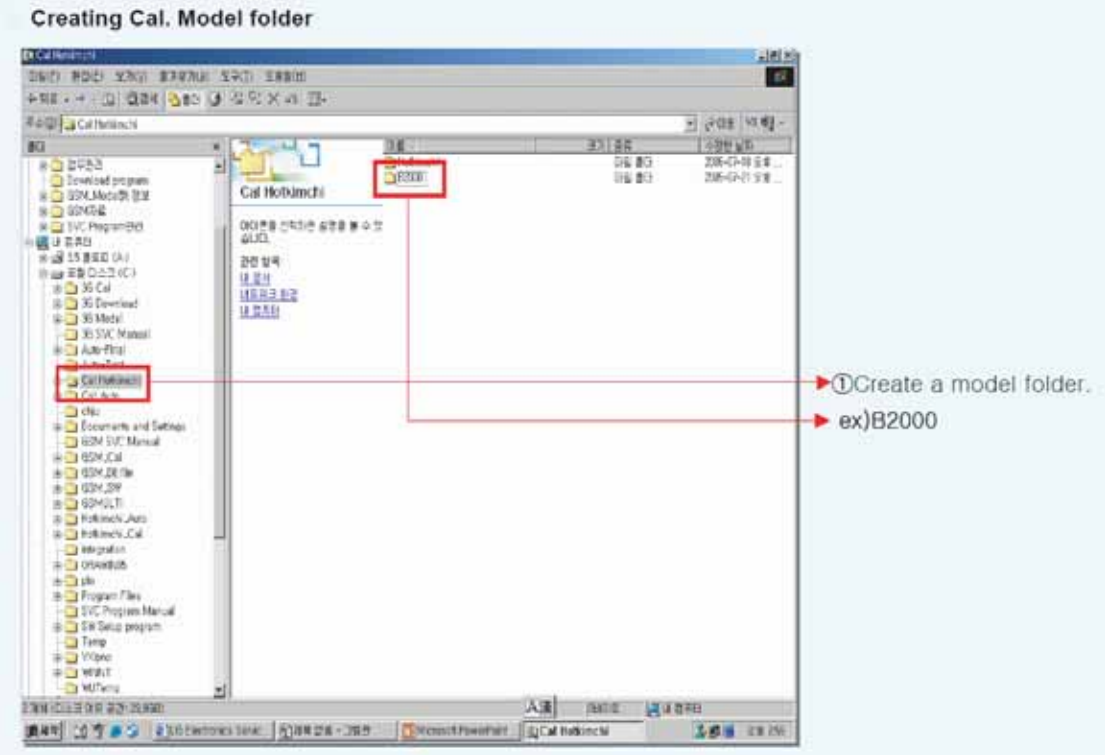
2) Downloading Hotkimchi Execution Program



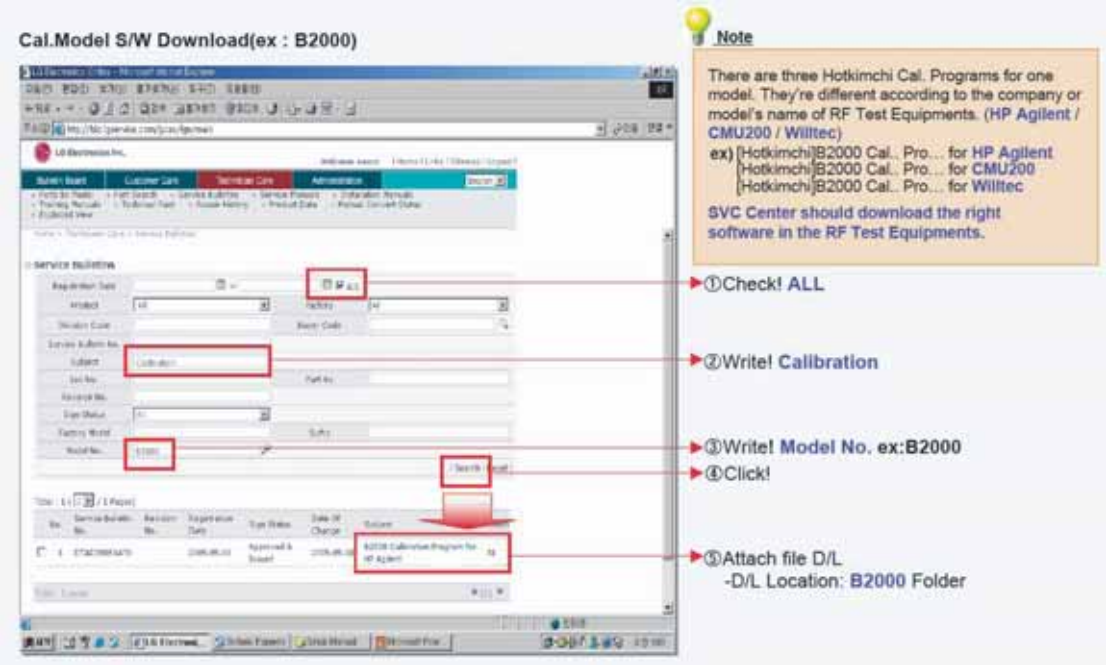
3) Directory Construction



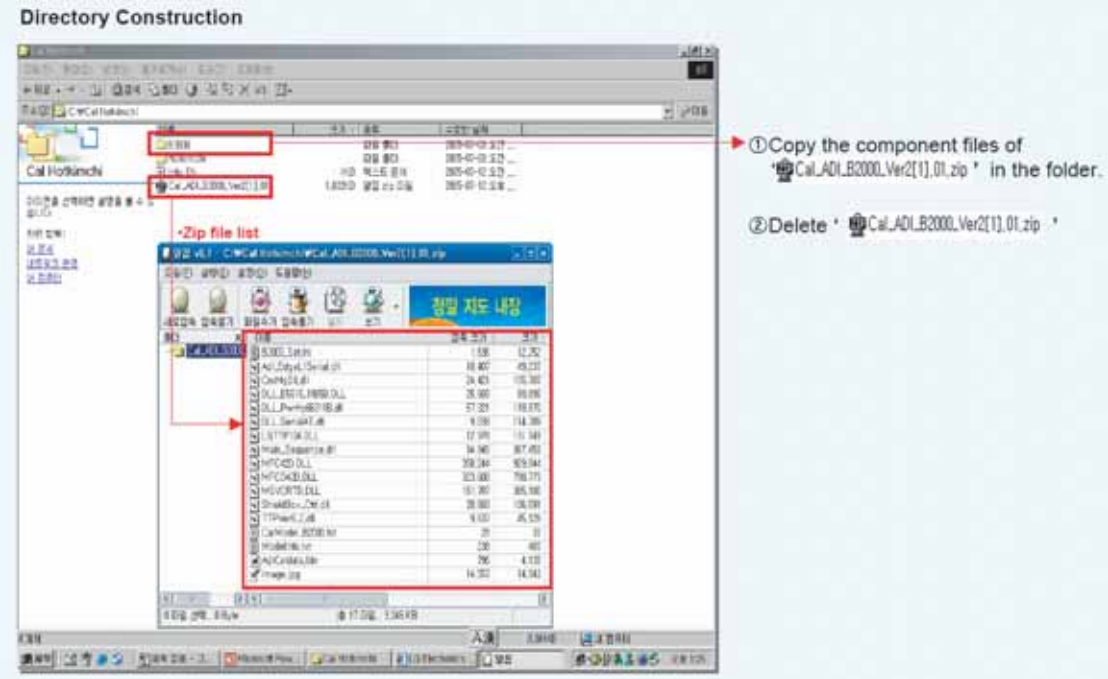
4) Creating Cal. Model folder



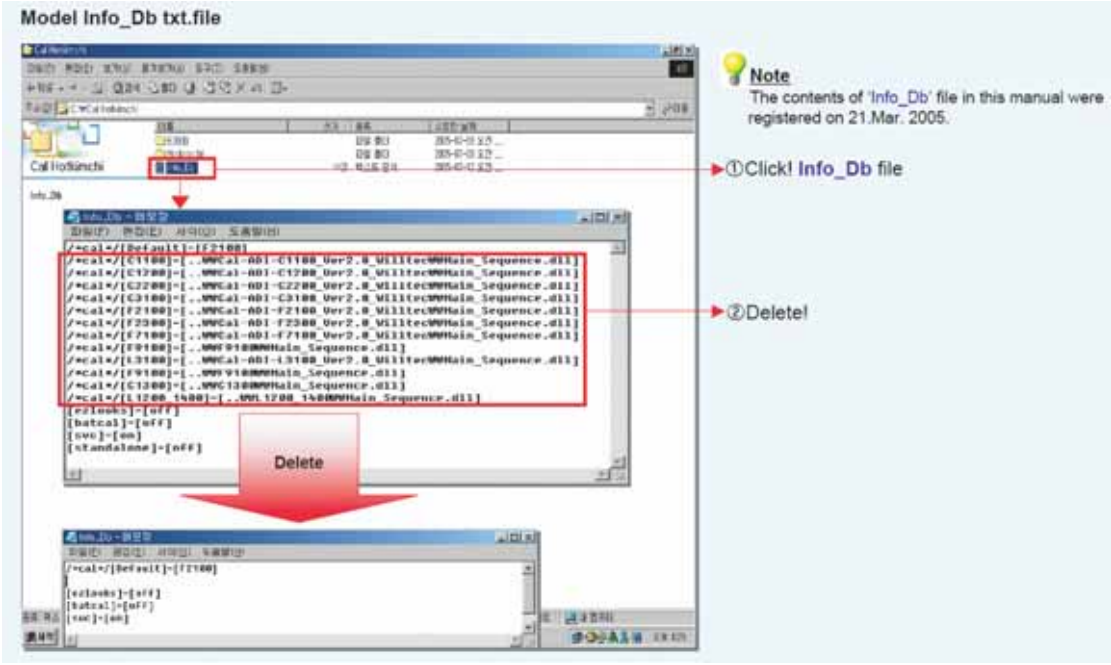
5) Cal. Model S/W Download(ex:B2000)



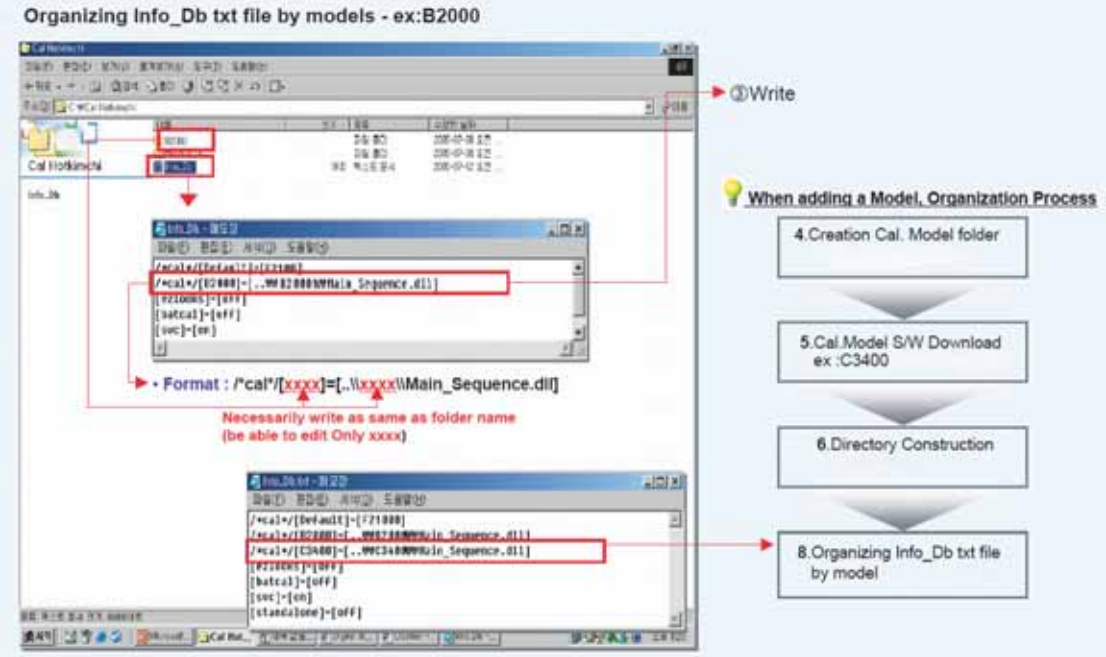
6) Directory Construction



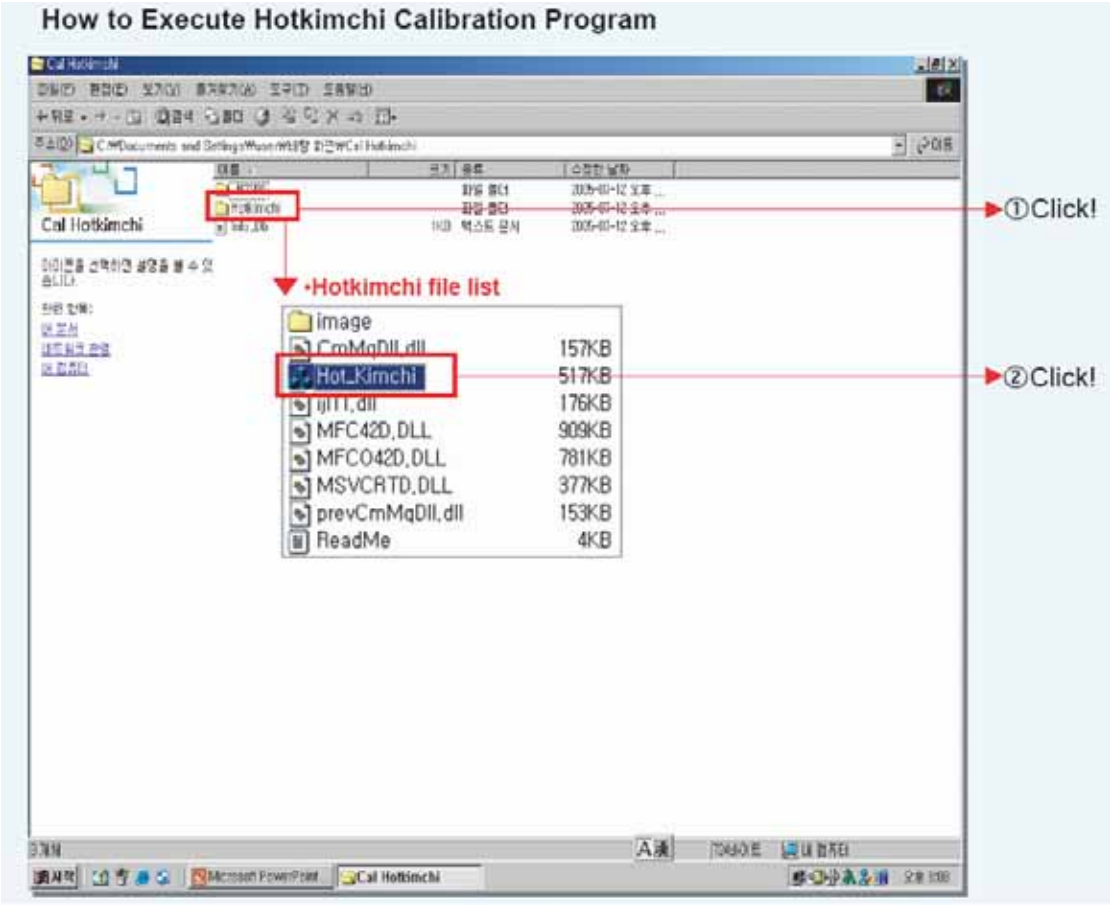
7) Model Info_Db txt.file



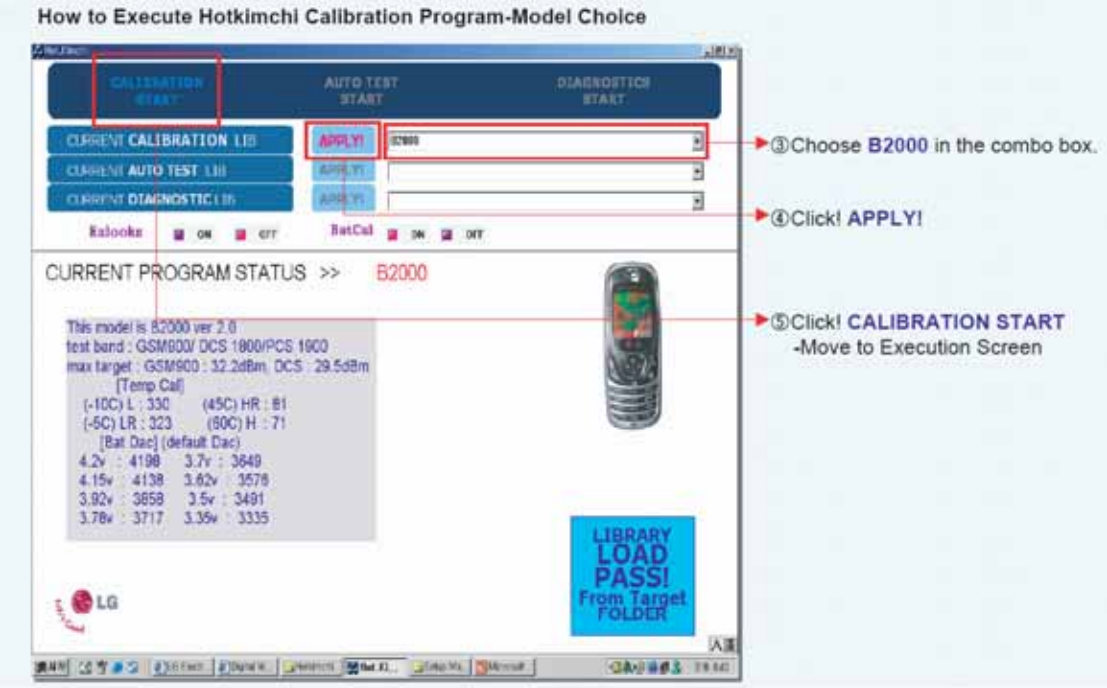
8) Organizing Info_Db txt file by models – ex:B2000



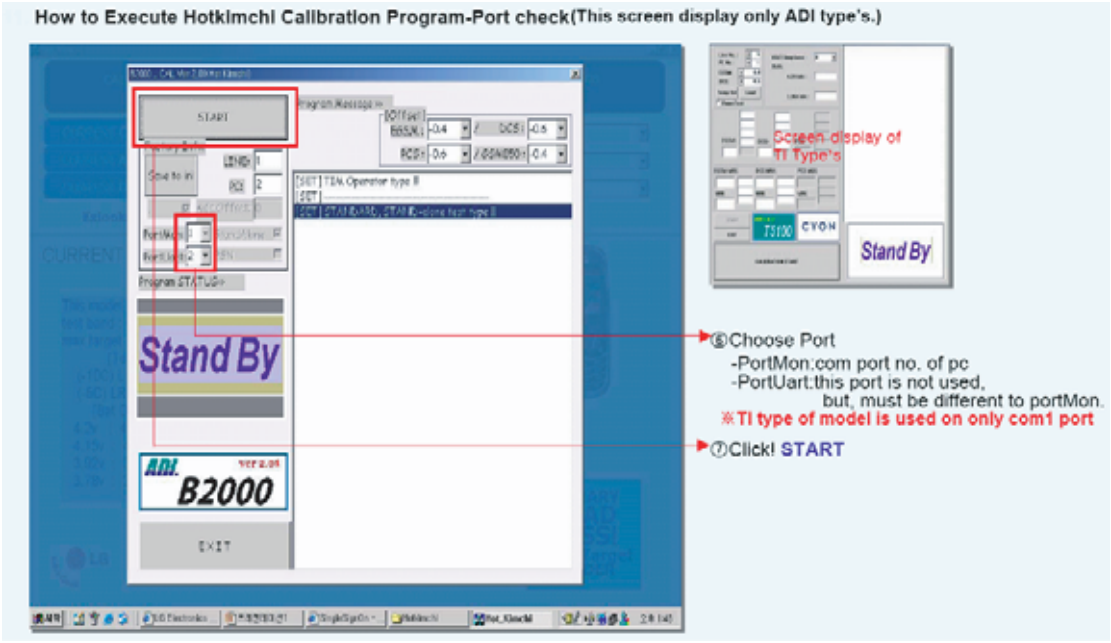
9) How to execute Hotkimchi Calibration Program



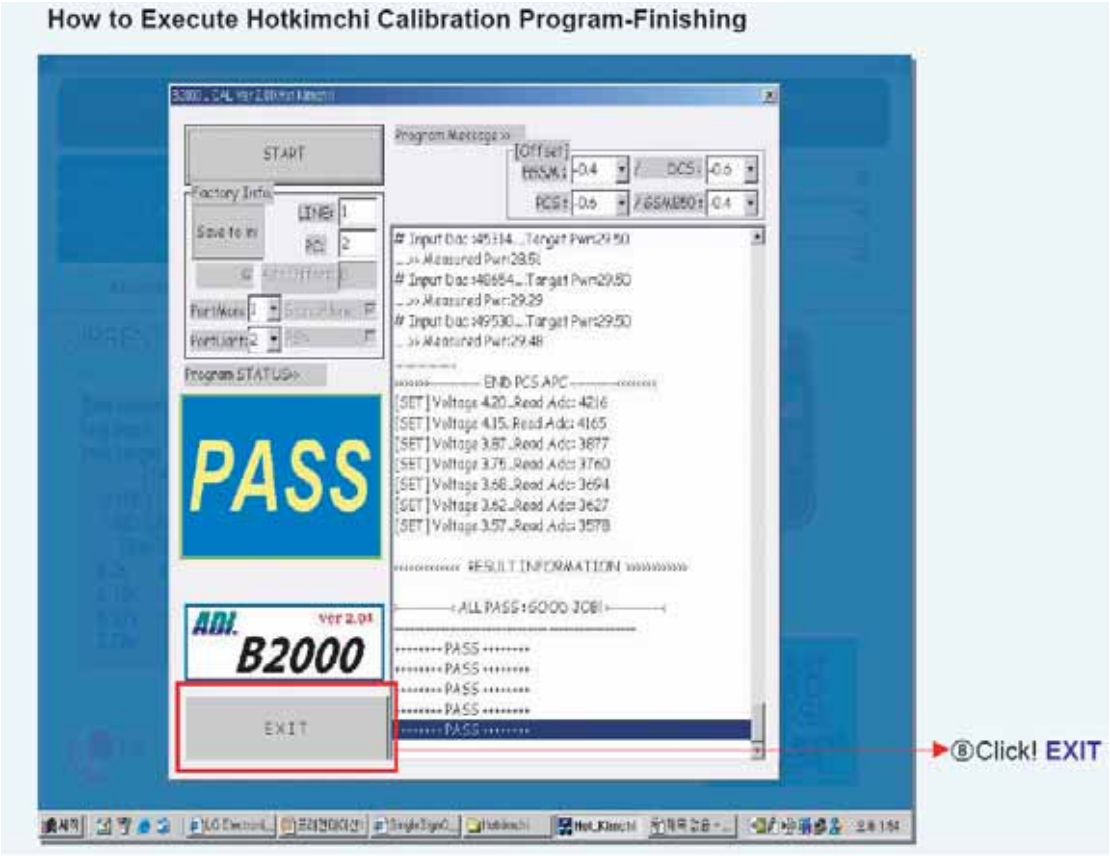
10) How to Execute Hotkimchi Calibration Program-Model Choice



11) How to Execute Hotkimchi Calibration Program-Port check(display only ADI type's)



12) How to Execute Hotkimchi Calibration Program-Finishing



4.8 LCD Trouble

4.8.1 LCD Blue Screen or abnormal display

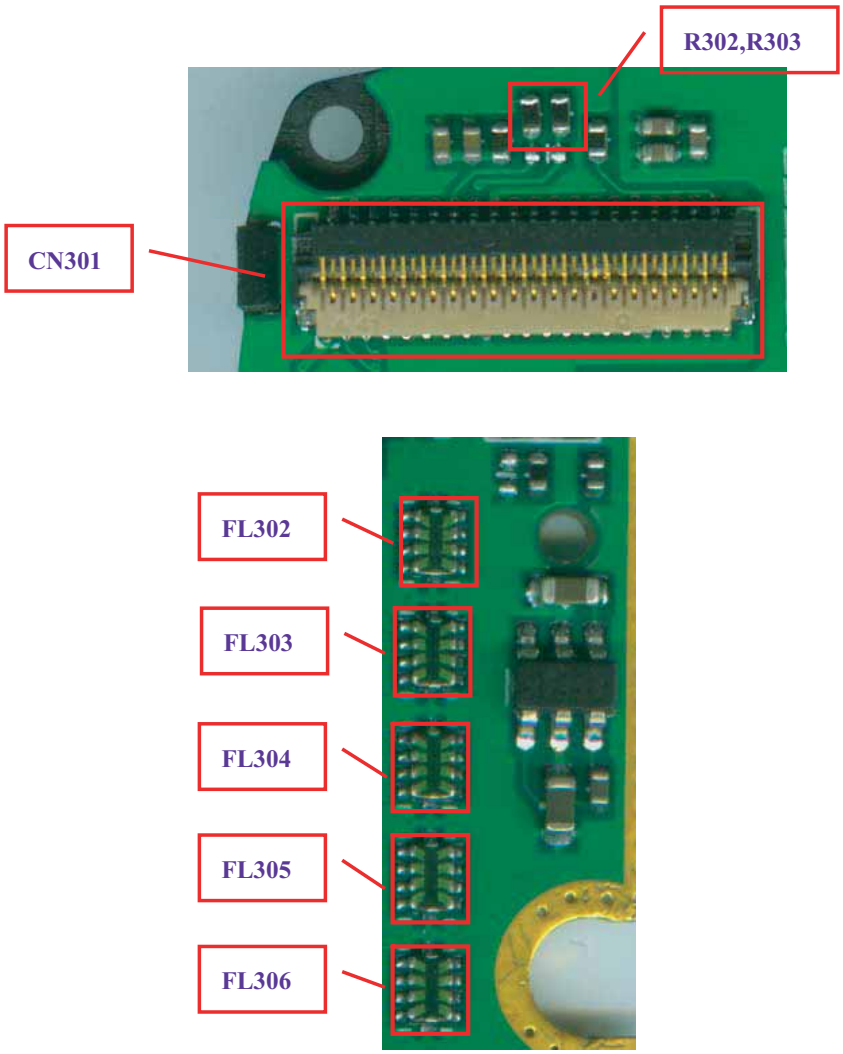
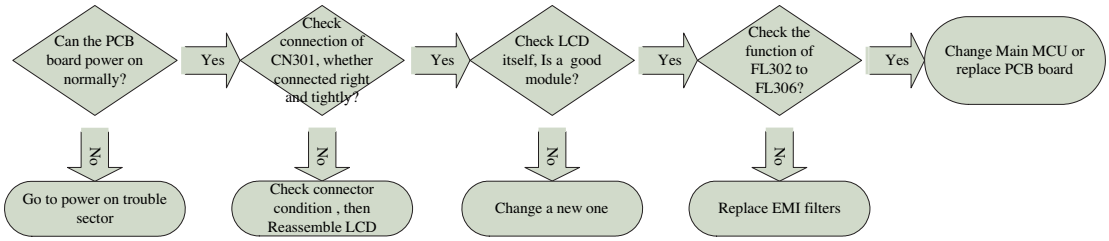


Figure 4-17

Checking Flow



4.8.2 LCD Black Screen

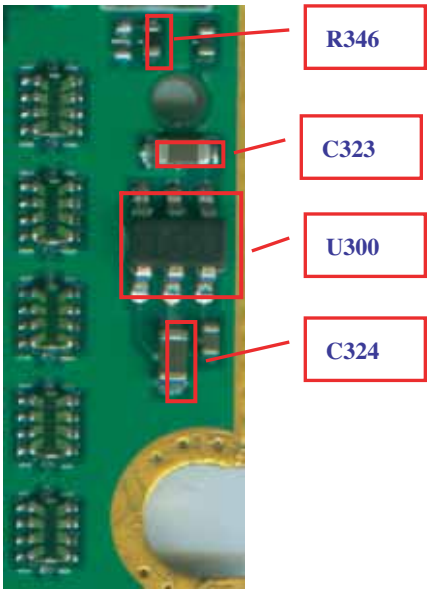
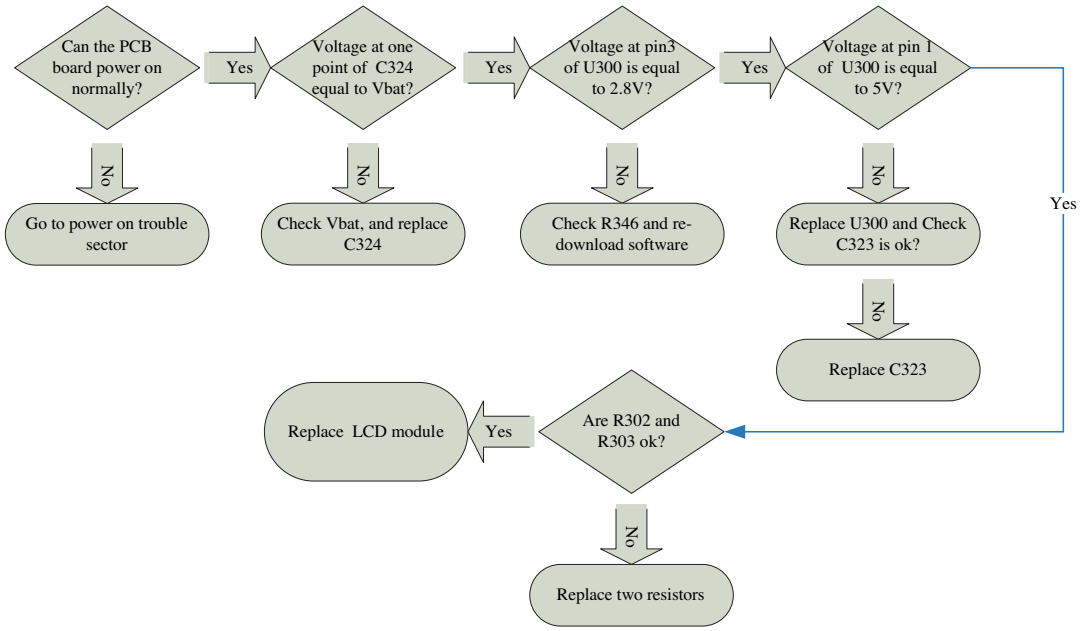


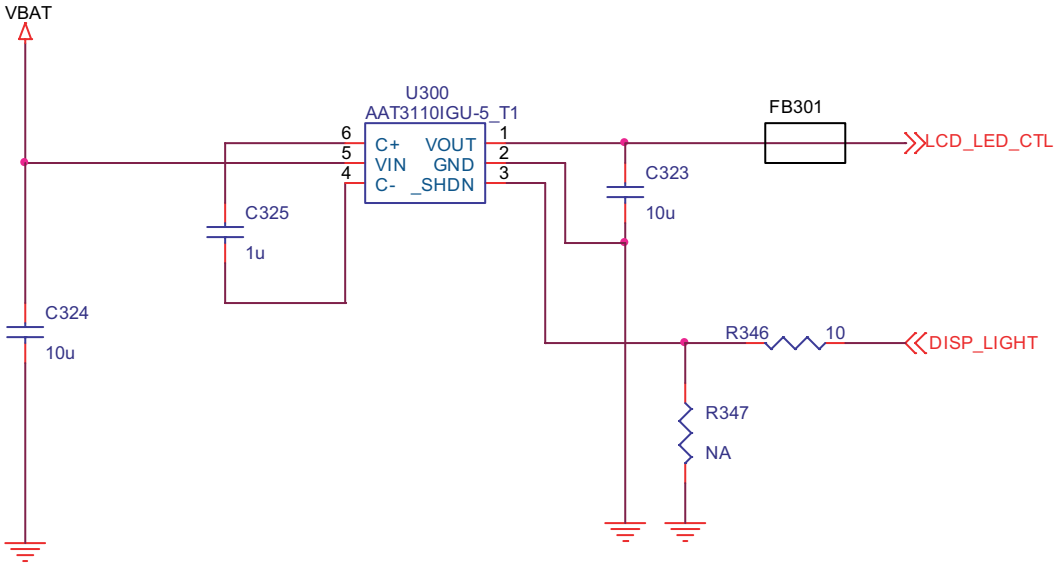
Figure 4-18

Checking Flow

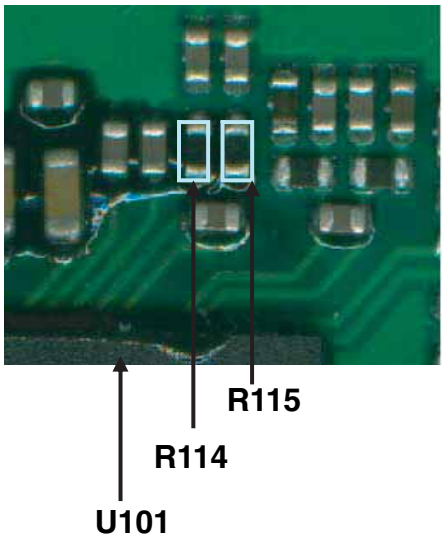


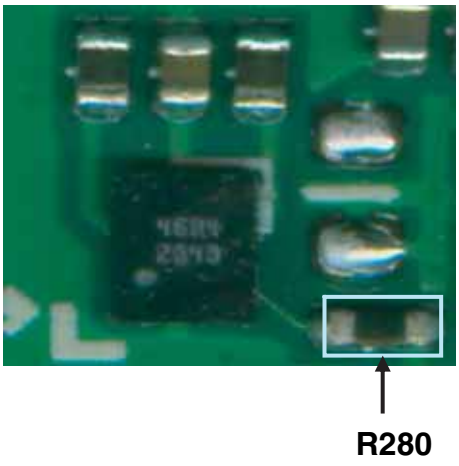
Circuit Diagram

CHARGE PUMP

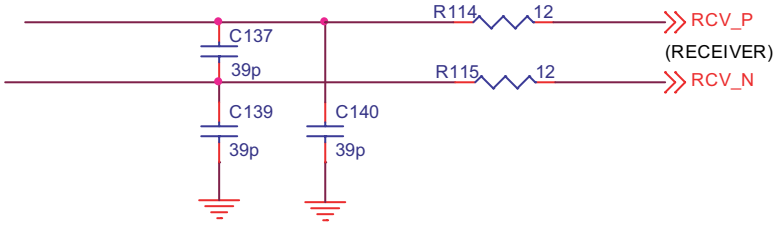


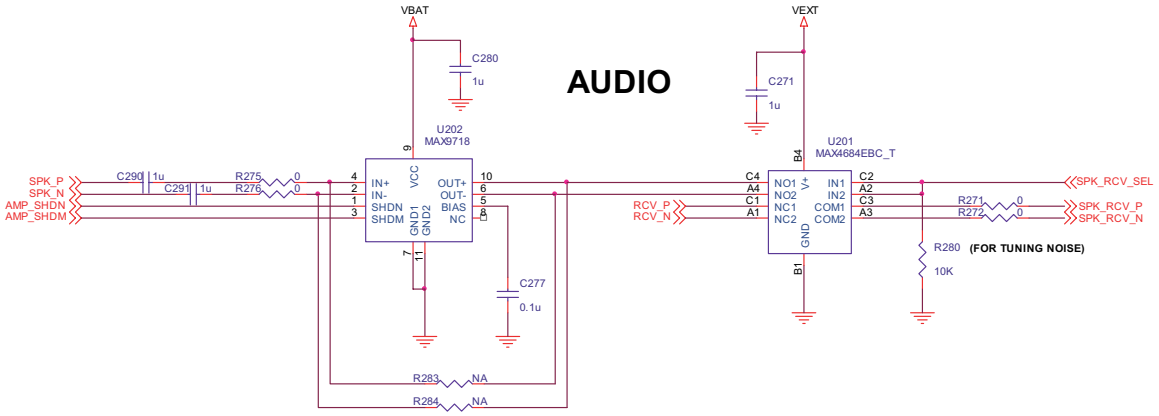
4.9 Receiver Trouble



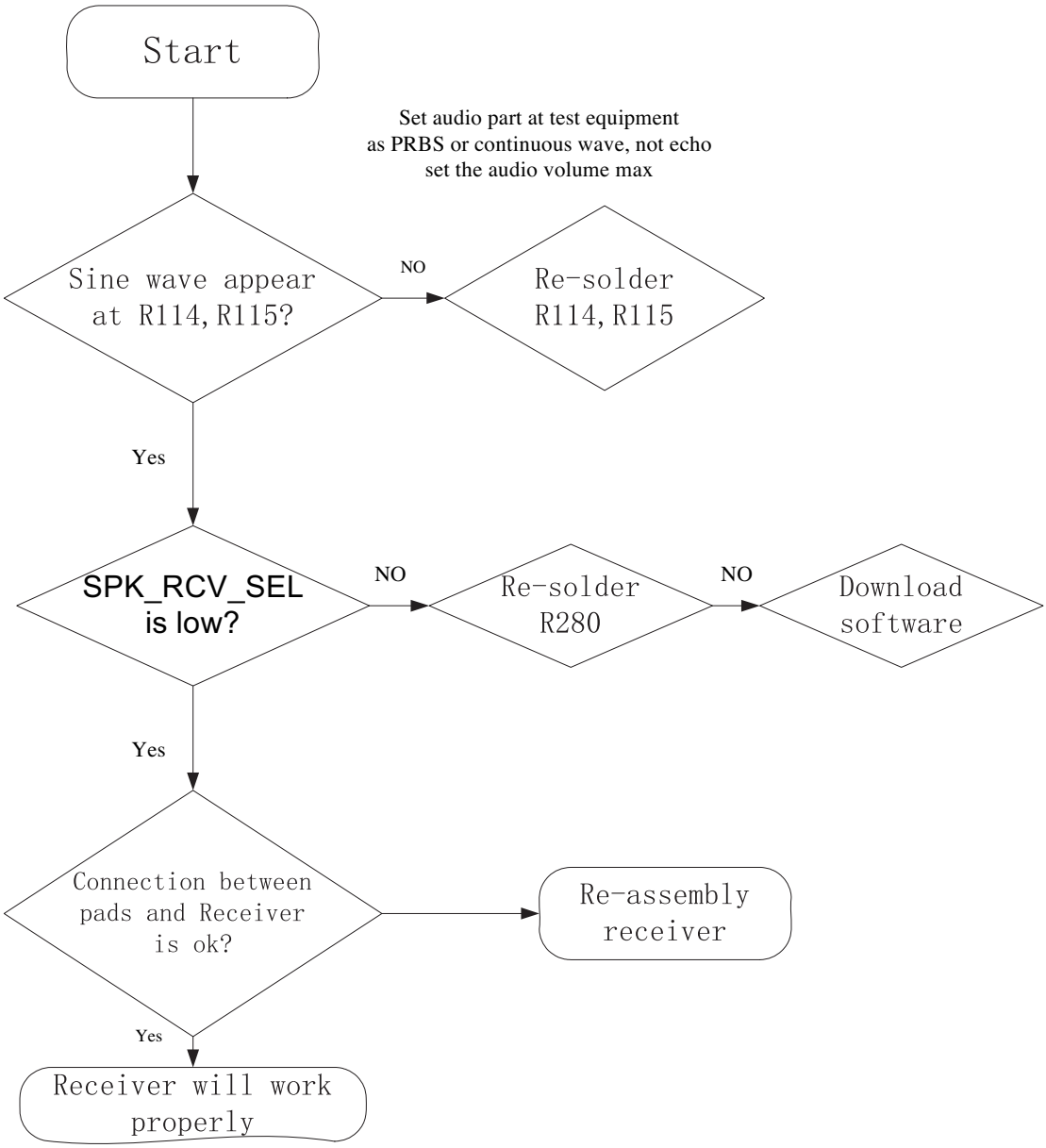


CIRCUIT DIAGRAM

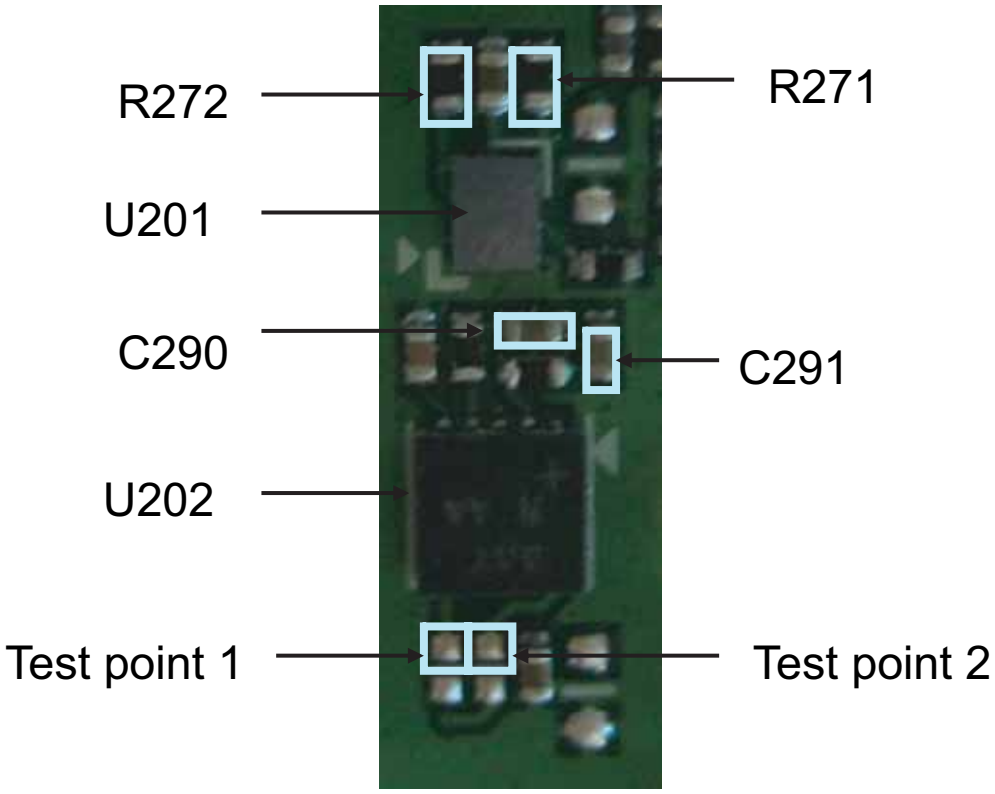



AUDIO
VBAT
C280
1u
U202
MAX9718
SPK_P
SPK_N
AMP_SHDN
AMP_SHDM
C290
1u
C291
1u
R275
0
R276
0
IN+
IN-
SHDN
SHDM
VCC
GND1
GND2
OUT+
OUT-
BIAS
NC
C277
0.1u
R283
NA
R284
NA
VEXT
C271
1u
U201
MAX4684EBC_T
RCV_P
RCV_N
NO1
NO2
NC1
NC2
V+
GND
IN1
IN2
COM1
COM2
R271
0
R272
0
SPK_RCV_SEL
SPK_RCV_P
SPK_RCV_N
R280
(FOR TUNING NOISE)
10K

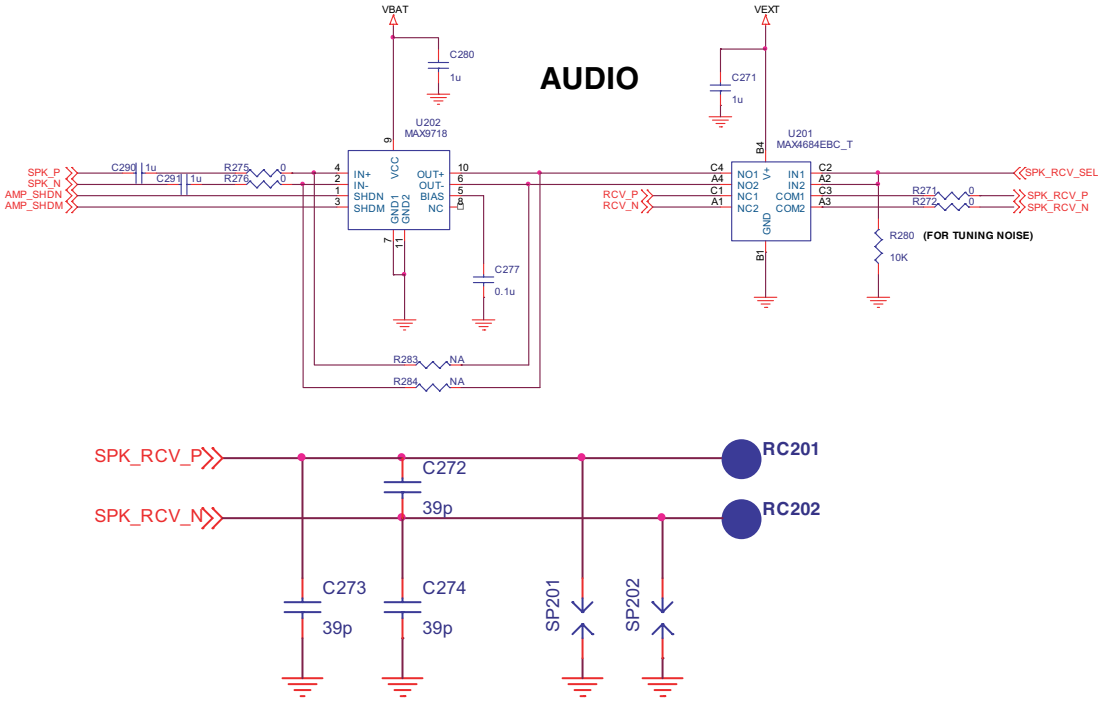
CHECKING FLOW



4.10 Speaker Trouble



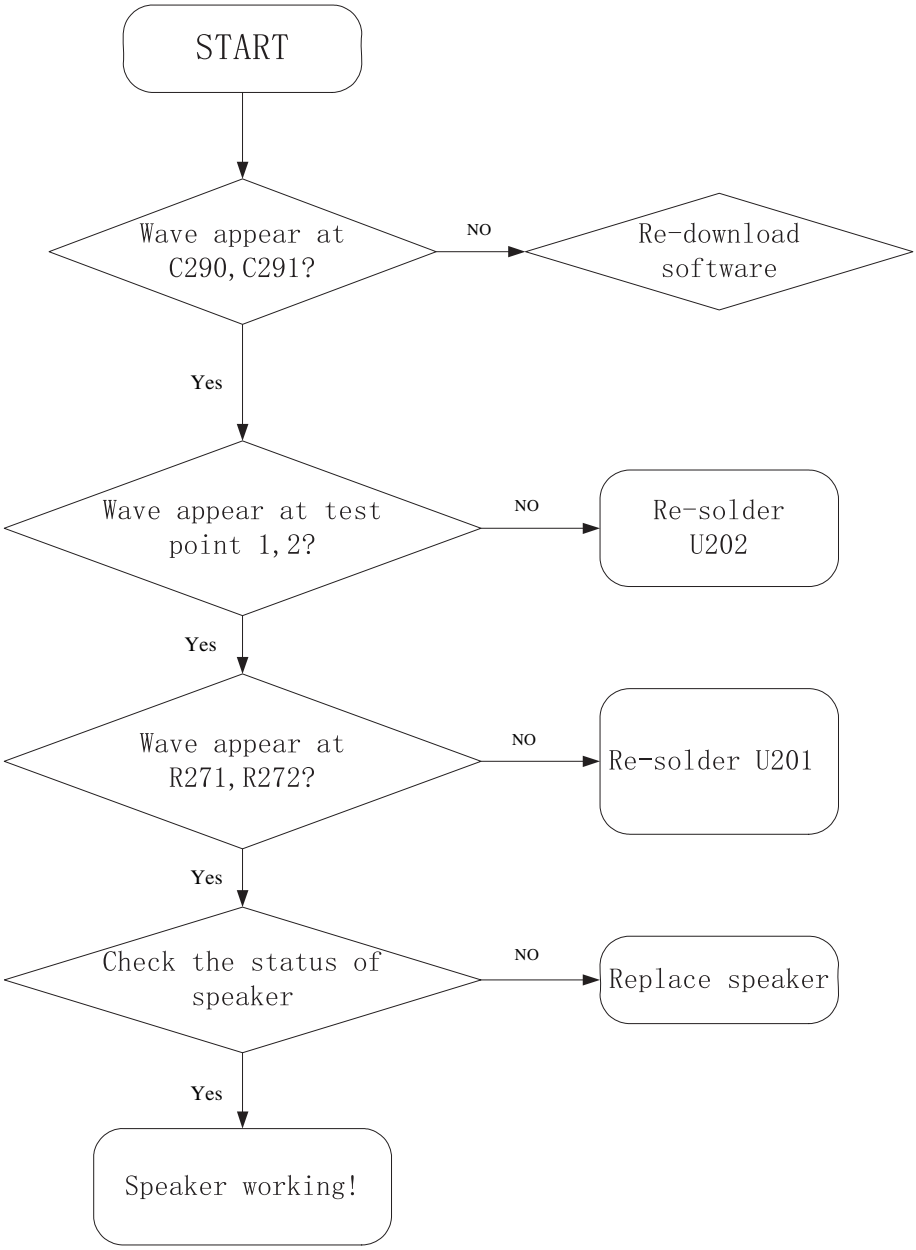
CIRCUIT DIAGRAM



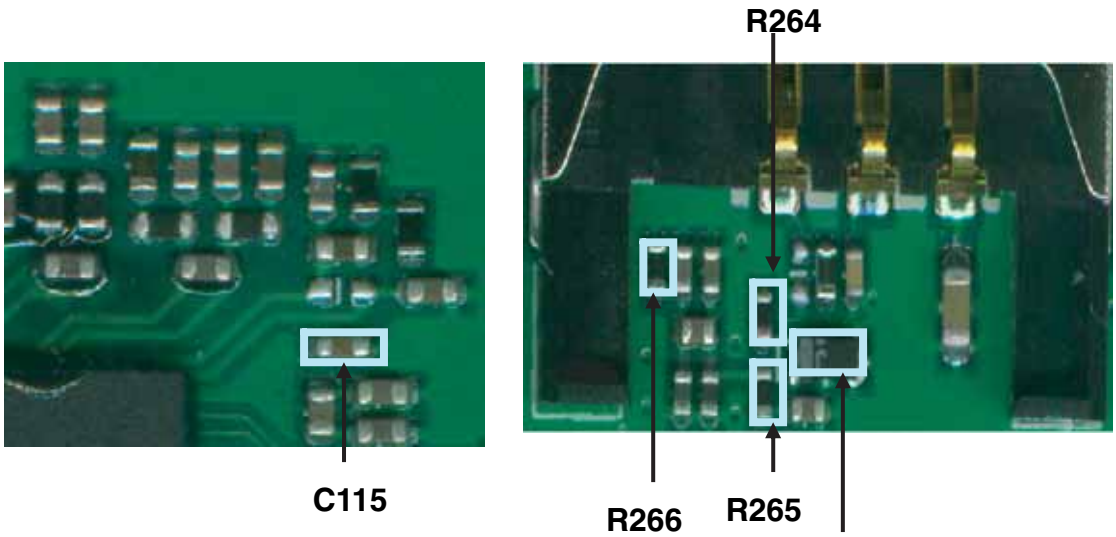
CHECKING FLOW

4. TROUBLE SHOOTING

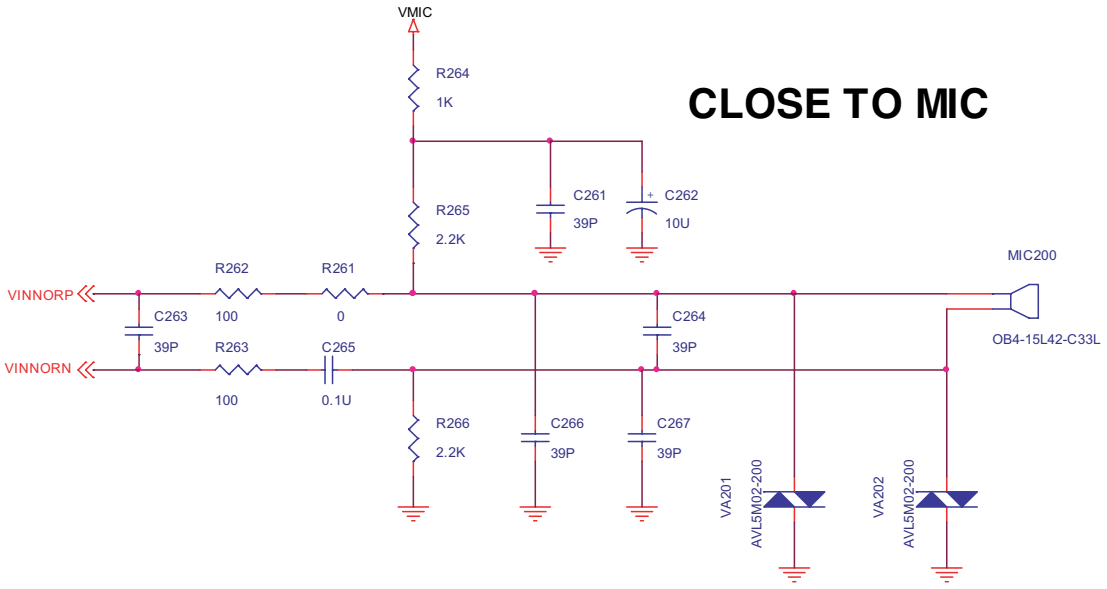
SETTING: Connect PIF to the phone, and Power on.Enter The engineering mode,and set” Melody on” at Buzzer of BB test menu



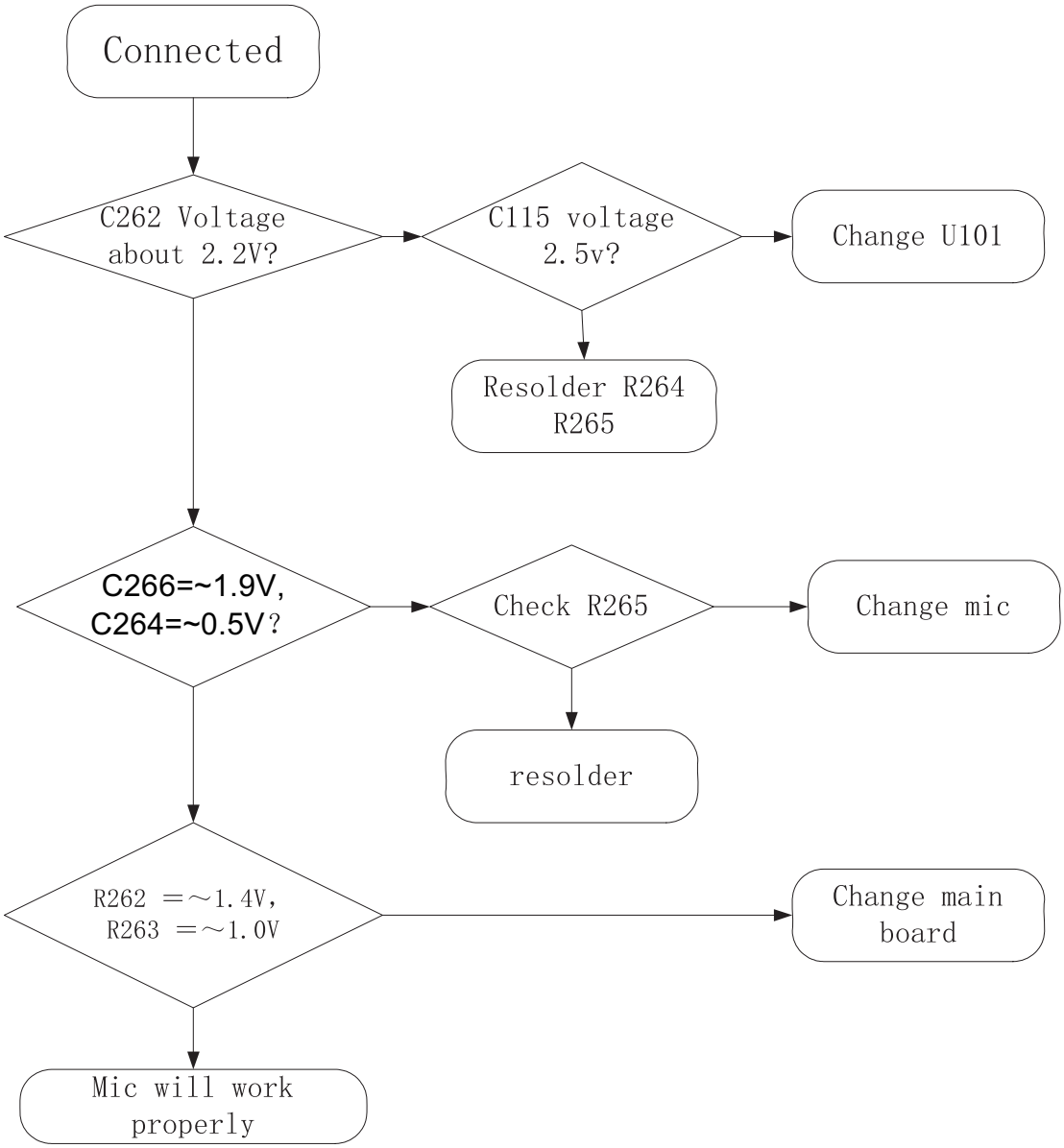
4.11 MIC Trouble



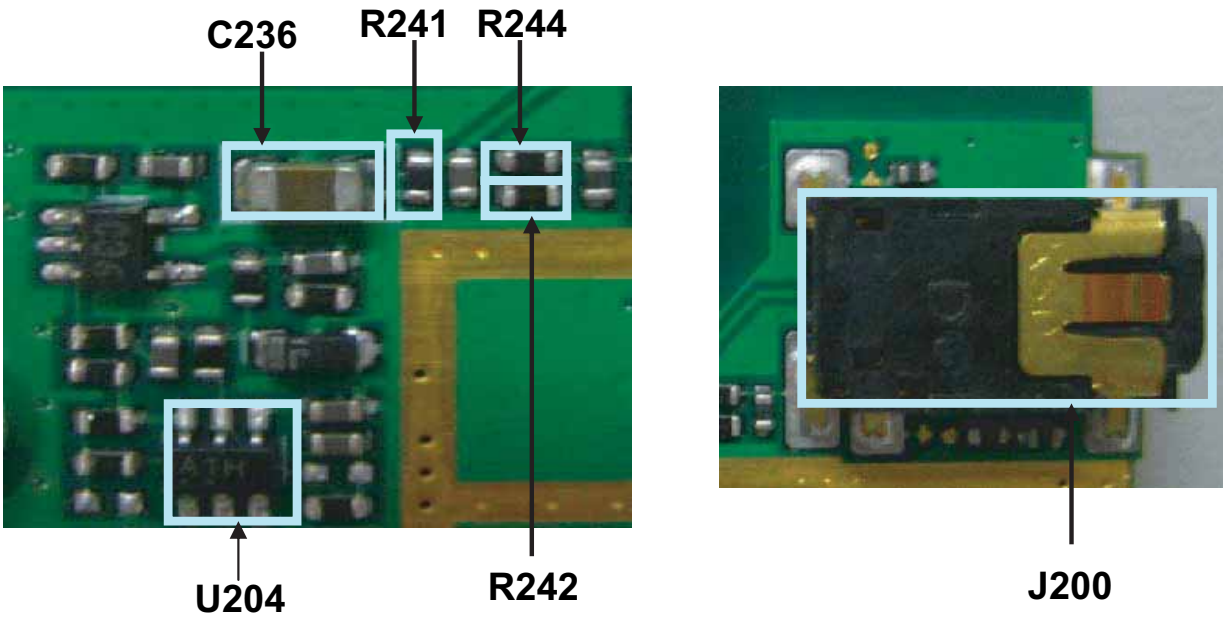
CIRCUIT DIAGRAM



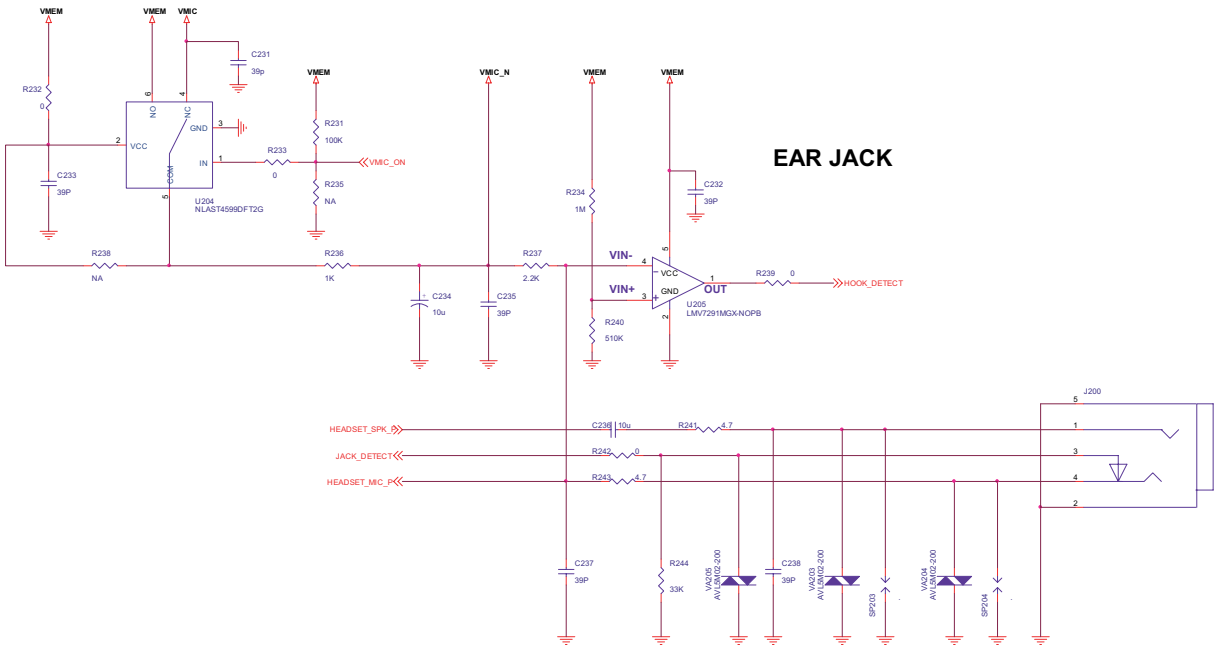
CHECKING FLOW



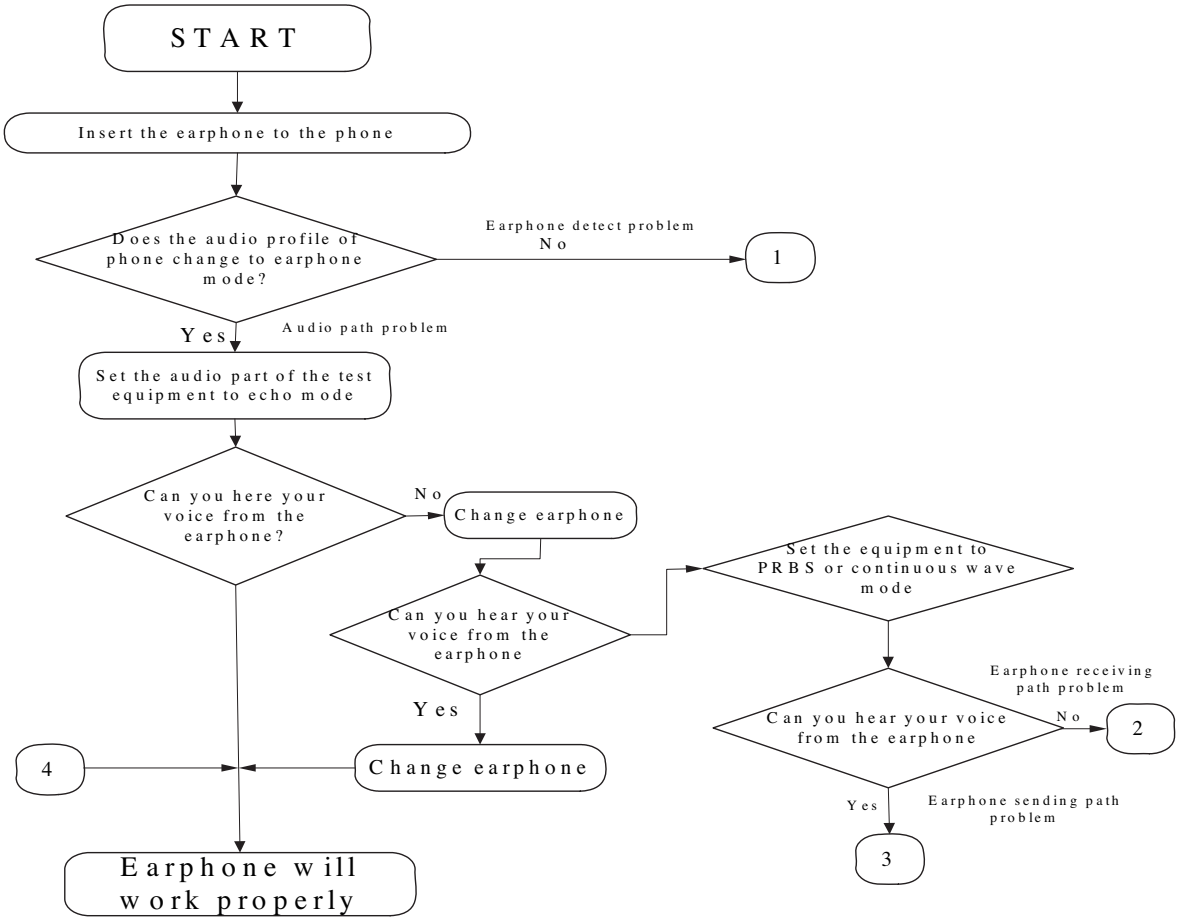
4.12 Earphone Trouble



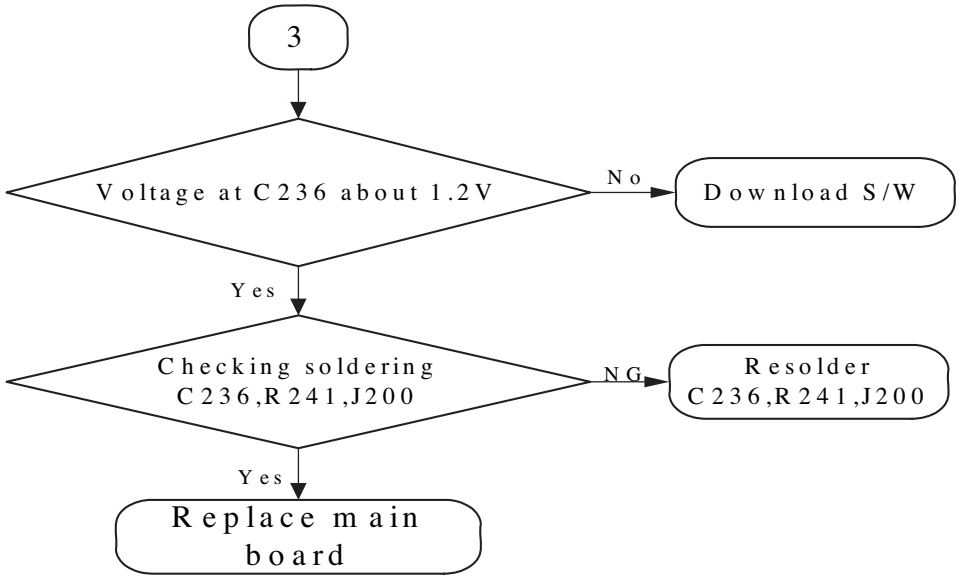
CIRCUIT DIAGRAM



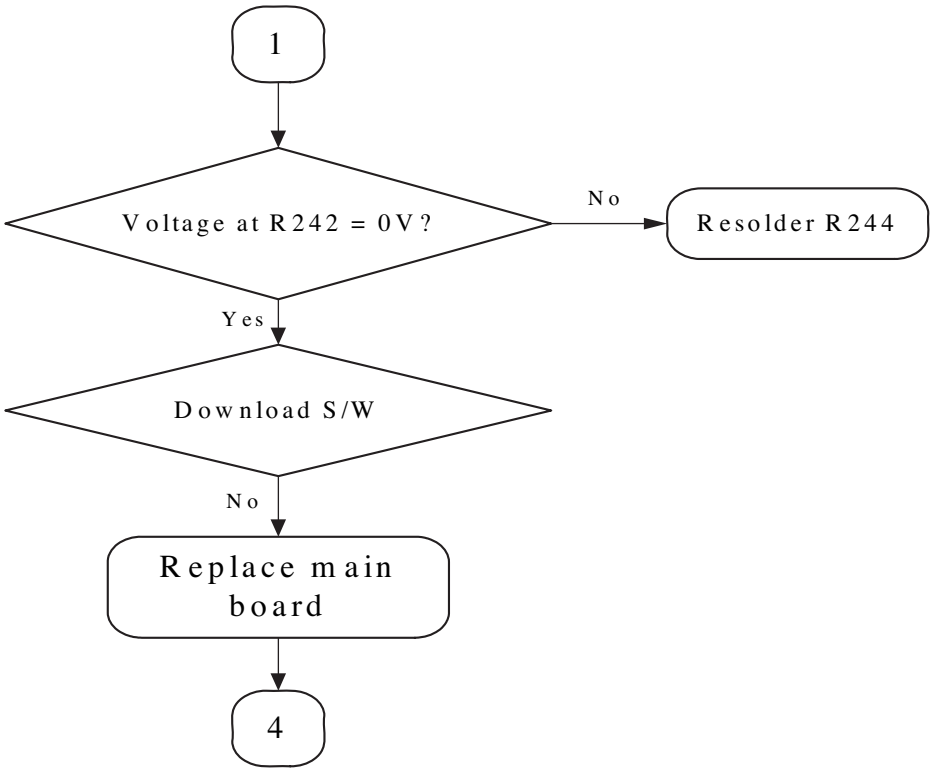
CHECKING FLOW



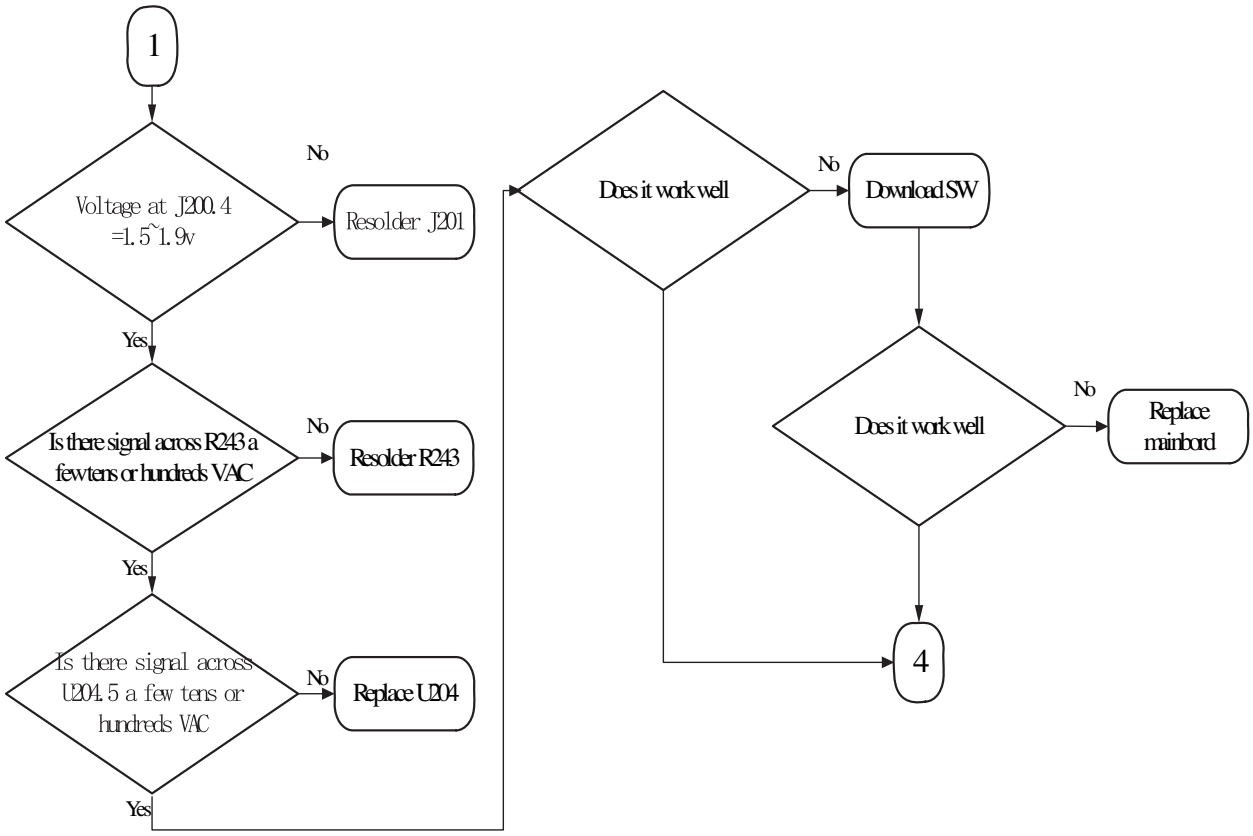
Earphone receiving path problem



Earphone detect problem



Earphone sending path problem



4.13 KEYPAD Backlight LEDS Trouble

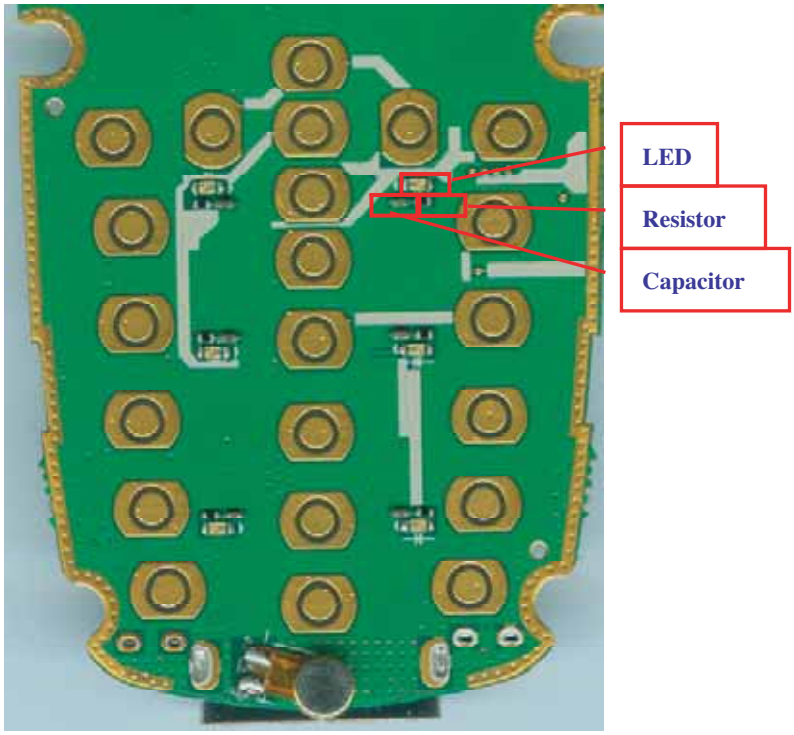
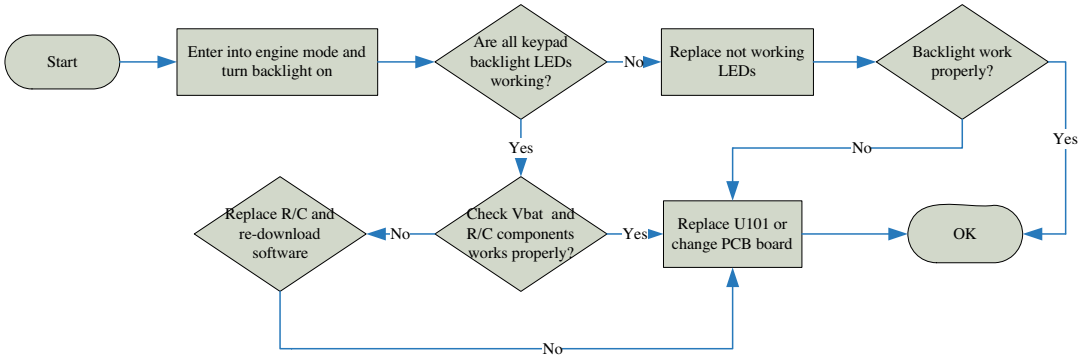


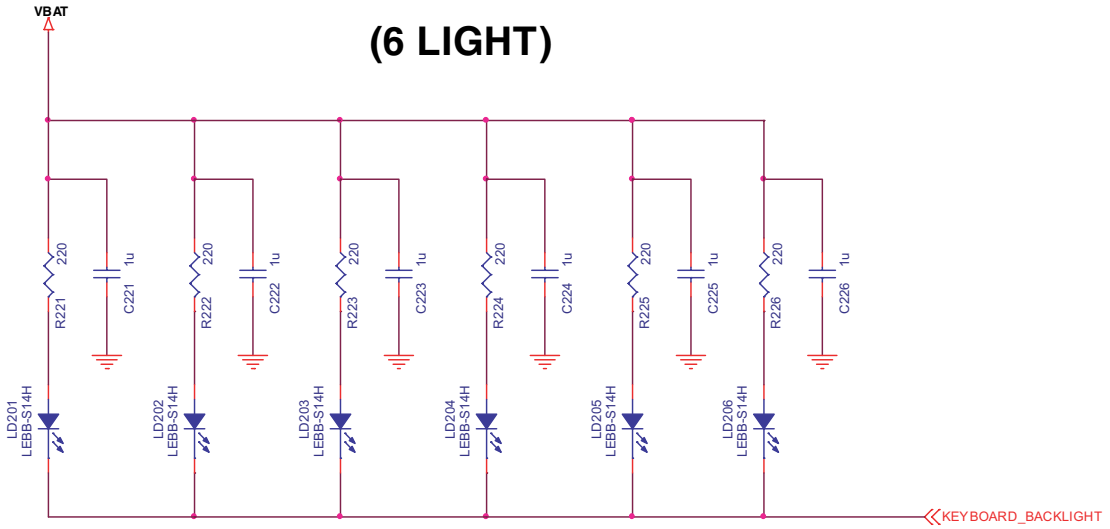
Figure 4-19

Checking Flow



KEY BACKLIGHT

(6 LIGHT)



4.14 SIM Trouble

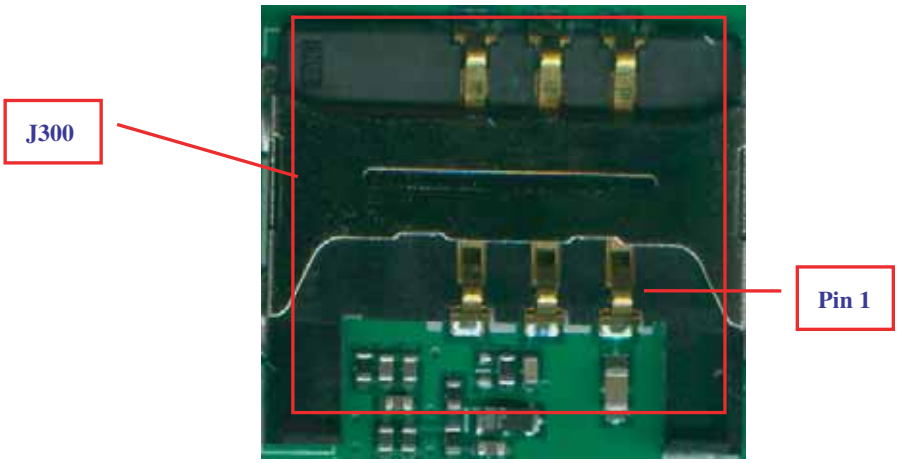
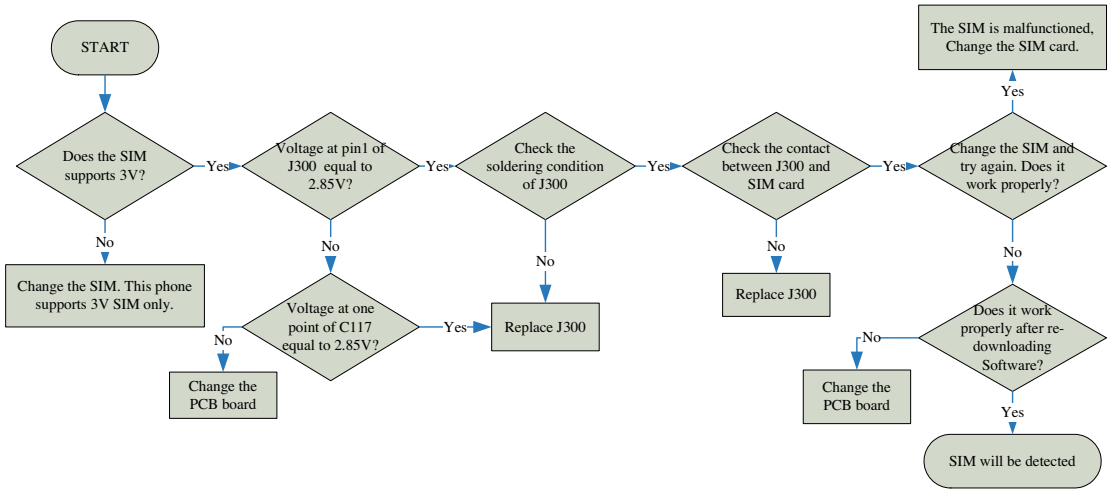
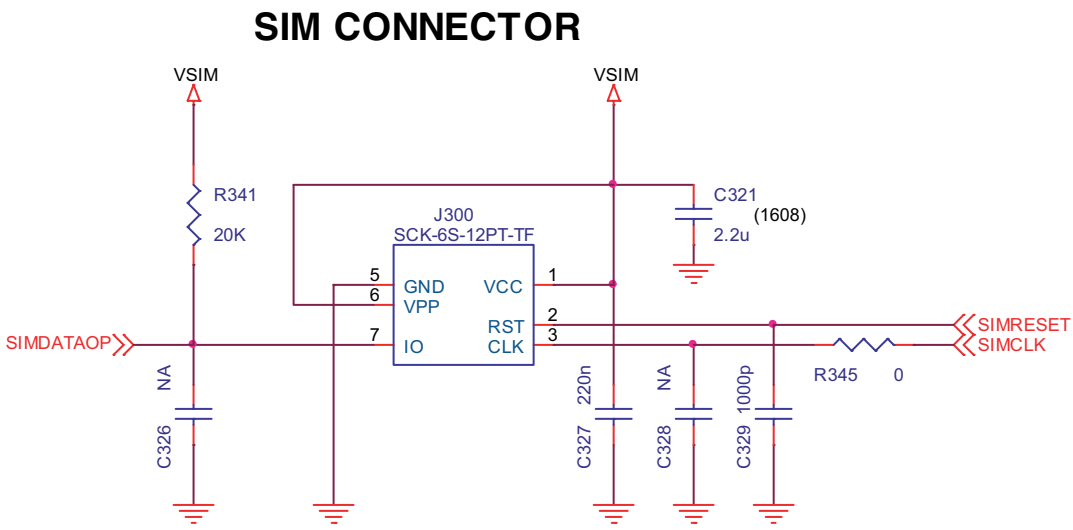


Figure 4-20

Checking Flow



Circuit Digram



5. Appendix

1. BOM

<Main component>

Level	Location NO.	Part Name	Part Number	Spec
3	SAFY00	PCB ASSY,MAIN	SAFY0178601	KG110 (ATOM) PCB ASSY,MAIN
4	SAFB00	PCB ASSY,MAIN,INSERT	SAFB0064001	KG110 ATOM
5	ANT	ANTENNA,GSM,FIXED	SNGF0018401	5 ,-7 dBd, ,Internal, Triple(GSM900+DCS1800+PCS1900), Pb Free ,; ,TRIPLE , , ,
5	BAT01	BATTERY,CELL,LITHIUM	SBCL0001303	2 V,1 mAh,COIN ,SOLDER TYPE BACKUP BATTERY
5	LCD	LCD MODULE	SVLM0021401	MAIN ,128*128 ,35.78*39.7*3.4 ,65k ,CSTN ,TM ,S6B33B6X ,1.52" CSTN Single
5	MIC	MICROPHONE	SUMY0003809	FPCB ,42 dB,4*1.5 ,
4	SAFF00	PCB ASSY,MAIN,SMT	SAFF0099901	KG110 ATOM
5	SAFC00	PCB ASSY,MAIN,SMT BOTTOM	SAFC0081101	KG110 (ATOM) PCB ASSY,MAIN,SMT BOTTOM
6	C101	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP
6	C102	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP
6	C103	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP
6	C104	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP
6	C105	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP
6	C106	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP
6	C107	CAP,CERAMIC,CHIP	ECCH0005604	10 uF,6.3V ,M ,X5R ,TC ,1608 ,R/TP
6	C108	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP
6	C109	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP
6	C110	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP
6	C111	CAP,CHIP,MAKER	ECZH0003202	1 uF,6.3V ,Z ,Y5V ,HD ,1005 ,R/TP
6	C112	CAP,CHIP,MAKER	ECZH0003202	1 uF,6.3V ,Z ,Y5V ,HD ,1005 ,R/TP
6	C113	CAP,CHIP,MAKER	ECZH0001421	2.2 uF,6.3V ,K ,X5R ,HD ,1608 ,R/TP
6	C114	CAP,CHIP,MAKER	ECZH0003202	1 uF,6.3V ,Z ,Y5V ,HD ,1005 ,R/TP
6	C115	CAP,CHIP,MAKER	ECZH0003202	1 uF,6.3V ,Z ,Y5V ,HD ,1005 ,R/TP
6	C116	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP
6	C117	CAP,CHIP,MAKER	ECZH0003202	1 uF,6.3V ,Z ,Y5V ,HD ,1005 ,R/TP
6	C118	CAP,CHIP,MAKER	ECZH0001421	2.2 uF,6.3V ,K ,X5R ,HD ,1608 ,R/TP
6	C119	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP
6	C120	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP
6	C122	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP

5. APPENDIX-BOM

Level	Location NO.	Part Name	Part Number	Spec
6	C123	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP
6	C124	CAP,CERAMIC,CHIP	ECCH0006201	4.7 uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP
6	C125	CAP,CHIP,MAKER	ECZH0003202	1 uF,6.3V ,Z ,Y5V ,HD ,1005 ,R/TP
6	C126	CAP,CHIP,MAKER	ECZH0003202	1 uF,6.3V ,Z ,Y5V ,HD ,1005 ,R/TP
6	C127	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP
6	C128	CAP,CHIP,MAKER	ECZH0003202	1 uF,6.3V ,Z ,Y5V ,HD ,1005 ,R/TP
6	C129	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP
6	C132	CAP,CHIP,MAKER	ECZH0001421	2.2uF,6.3V ,K ,X5R ,HD ,1608 ,R/TP
6	C134	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP
6	C135	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP
6	C136	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP
6	C137	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP
6	C138	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP
6	C139	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP
6	C140	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP
6	C141	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP
6	C142	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP
6	C150	CAP,CERAMIC,CHIP	ECCH0006201	4.7uF,6.3V ,K ,X5R ,TC ,1608 ,R/TP
6	C152	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP
6	C153	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP
6	C154	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP
6	C155	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP
6	C156	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP
6	C231	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP
6	C232	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP
6	C233	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP
6	C234	CAP,TANTAL,CHIP, MAKER	ECTZ0005201	10uF,6.3V ,M ,L_ESR ,1608 ,R/TP
6	C235	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP
6	C236	CAP,CERAMIC,CHIP	ECCH0003401	10uF,6.3V ,Z ,Y5V ,HD ,2012 ,R/TP
6	C237	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP
6	C238	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP
6	C241	CAP,CERAMIC,CHIP	ECCH0000128	100 pF,50V,J,NP0,TC,1005,R/TP
6	C242	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP
6	C243	CAP,CHIP,MAKER	ECZH0003202	1 uF,6.3V ,Z ,Y5V ,HD ,1005 ,R/TP
6	C244	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP

Level	Location NO.	Part Name	Part Number	Spec
6	C261	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP
6	C262	CAP,TANTAL,CHIP,MAKER	ECTZ0005201	10 uF,6.3V ,M ,L_ESR ,1608 ,R/TP
6	C263	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP
6	C264	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP
6	C265	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP
6	C266	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP
6	C267	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP
6	C271	CAP,CHIP,MAKER	ECZH0003202	1 uF,6.3V ,Z ,Y5V ,HD ,1005 ,R/TP
6	C277	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP
6	C280	CAP,CHIP,MAKER	ECZH0003202	1 uF,6.3V ,Z ,Y5V ,HD ,1005 ,R/TP
6	C290	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP
6	C291	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP
6	C311	CAP,TANTAL,CHIP	ECTH0002101	1 uF,16V ,M ,STD ,1608 ,R/TP
6	C312	CAP,TANTAL,CHIP,MAKER	ECTZ0005201	10 uF,6.3V ,M ,L_ESR ,1608 ,R/TP
6	C313	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP
6	C314	CAP,CERAMIC,CHIP	ECCH0000110	10 pF,50V,D,NP0,TC,1005,R/TP
6	C315	CAP,CERAMIC,CHIP	ECCH0000104	3 pF,50V,C,NP0,TC,1005,R/TP
6	C321	CAP,CHIP,MAKER	ECZH0001421	2.2uF,6.3V ,K ,X5R ,HD ,1608 ,R/TP
6	C322	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP
6	C323	CAP,CERAMIC,CHIP	ECCH0005604	10 uF,6.3V ,M ,X5R ,TC ,1608 ,R/TP
6	C324	CAP,CERAMIC,CHIP	ECCH0005604	10 uF,6.3V ,M ,X5R ,TC ,1608 ,R/TP
6	C325	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP
6	C327	CAP,CHIP,MAKER	ECZH0001211	220 nF,10V ,Z ,Y5V ,HD ,1005 ,R/TP
6	C329	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP
6	C403	CAP,CERAMIC,CHIP	ECCH0000701	1.2 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP
6	C405	CAP,CERAMIC,CHIP	ECCH0000393	22 uF,6.3V ,M ,X5R ,HD ,2012 ,R/TP
6	C406	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP
6	C407	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP
6	C408	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP
6	C409	CAP,CERAMIC,CHIP	ECCH0000115	22 pF,50V,J,NP0,TC,1005,R/TP
6	C410	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP
6	C411	CAP,CERAMIC,CHIP	ECCH0000117	27 pF,50V,J,NP0,TC,1005,R/TP
6	C412	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP
6	C413	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP
6	C414	CAP,CERAMIC,CHIP	ECCH0000117	27 pF,50V,J,NP0,TC,1005,R/TP

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Level	Location NO.	Part Name	Part Number	Spec
6	C415	CAP,CERAMIC,CHIP	ECCH0000126	68 pF,50V,J,NP0,TC,1005,R/TP
6	C416	CAP,CERAMIC,CHIP	ECCH0000126	68 pF,50V,J,NP0,TC,1005,R/TP
6	C417	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP
6	C418	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP
6	C421	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP
6	C422	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP
6	C423	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP
6	C424	CAP,CERAMIC,CHIP	ECCH0000155	10 nF,16V,K,X7R,HD,1005,R/TP
6	C425	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP
6	C426	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP
6	C427	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP
6	C428	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP
6	C429	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP
6	C430	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP
6	C431	CAP,CHIP,MAKER	ECZH0001211	220 nF,10V ,Z ,Y5V ,HD ,1005 ,R/TP
6	C432	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP
6	C433	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP
6	C434	CAP,CERAMIC,CHIP	ECCH0000143	1 nF,50V,K,X7R,HD,1005,R/TP
6	C435	CAP,CERAMIC,CHIP	ECCH0000167	0.1 uF,6.3V,K,X5R,HD,1005,R/TP
6	C436	CAP,CERAMIC,CHIP	ECCH0000122	47 pF,50V,J,NP0,TC,1005,R/TP
6	C440	CAP,CERAMIC,CHIP	ECCH0000112	15 pF,50V,J,NP0,TC,1005,R/TP
6	C444	CAP,CERAMIC,CHIP	ECCH0000128	100 pF,50V,J,NP0,TC,1005,R/TP
6	C445	CAP,CERAMIC,CHIP	ECCH0000128	100 pF,50V,J,NP0,TC,1005,R/TP
6	CN302	CONNECTOR,I/O	ENRY0003401	24 PIN,0.5 mm,ETC , ,
6	D100	DIODE,SWITCHING	EDSY0012101	US-FLAT ,30 V,1 A,R/TP ,2.5*1.25*0.6(t)
6	D101	DIODE,SWITCHING	EDSY0005701	EMT3 ,80 V,4 A,R/TP ,
6	D300	DIODE,SWITCHING	EDSY0012301	1-1E1A ,85 V,1 A,R/TP ,P=200mW, IFM=200mA
6	FB301	FILTER,BEAD,CHIP	SFBH0007101	120 ohm,1005 ,Ferrite Bead
6	FL301	FILTER,EMI/POWER	SFEY0007101	SMD ,1CH,1608Feedthru ESD/EMI filter for power Pb-free
6	FL302	FILTER,EMI/POWER	SFEY0007102	SMD ,5.6 V,SMD ,4ch. R-Varistor Array(400Ohm,25pF)
6	FL303	FILTER,EMI/POWER	SFEY0007102	SMD ,5.6 V,SMD ,4ch. R-Varistor Array(400Ohm,25pF)
6	FL304	FILTER,EMI/POWER	SFEY0007102	SMD ,5.6 V,SMD ,4ch. R-Varistor Array(400Ohm,25pF)
6	FL305	FILTER,EMI/POWER	SFEY0007102	SMD ,5.6 V,SMD ,4ch. R-Varistor Array(400Ohm,25pF)
6	FL306	FILTER,EMI/POWER	SFEY0007102	SMD ,5.6 V,SMD ,4ch. R-Varistor Array(400Ohm,25pF)

Level	Location NO.	Part Name	Part Number	Spec
6	FL401	FILTER,SAW,DUAL	SFSB0000801	942.5 MHz,35 MHz,2.3 dB,21 dB,1842.5 MHz,75 MHz,2.4 dB,12 dB,2.5*2.0*0.76 ,SMD ,Pb-free_Dual(GSM900+DCS1800 Rx) ,; ,942.5MHz_1842.5MHz ,2.5*2.0*0.76 ,SMD ,[empty]
6	J200	CONN,JACK/PLUG,EARPHONE	ENJE0002301	3,5 PIN,G7000 EAR JACK 3 pole, 5 pin KSD
6	J300	CONN,SOCKET	ENSY0015901	6 PIN,ETC , ,2.54 mm,H=2.2
6	L401	INDUCTOR,CHIP	ELCH0001032	18 nH,J ,1005 ,R/TP ,PBFREE
6	L402	INDUCTOR,CHIP	ELCH0003817	7.5 nH,J ,1005 ,R/TP ,
6	L403	INDUCTOR,CHIP	ELCH0005015	6.8 nH,S ,1005 ,R/TP ,
6	L404	INDUCTOR,CHIP	ELCH0005005	27 nH,J ,1005 ,R/TP ,
6	L405	INDUCTOR,CHIP	ELCH0005006	33 nH,J ,1005 ,R/TP ,
6	L406	INDUCTOR,CHIP	ELCH0005006	33 nH,J ,1005 ,R/TP ,
6	L407	INDUCTOR,CHIP	ELCH0007602	680 nH,J ,2012 ,R/TP ,
6	L408	INDUCTOR,CHIP	ELCH0005006	33 nH,J ,1005 ,R/TP ,
6	L410	INDUCTOR,CHIP	ELCH0001034	3.3 nH,S ,1005 ,R/TP ,PBFREE
6	L411	INDUCTOR,CHIP	ELCH0005001	2.2 nH,S ,1005 ,R/TP ,
6	L412	INDUCTOR,CHIP	ELCH0001421	47 nH,J ,1005 ,R/TP ,PBFREE
6	Q100	TR,FET,P-CHANNEL	EQFP0004201	2.9*1.9*0.8(t) ,.7 W,20 V,-6 A,R/TP ,NDC652P upgrade(substitution) item, Pb free
6	Q300	TR,BJT,ARRAY	EQBA0000406	SC-70 ,0.2 W,R/TP ,CDMA,Common use
6	Q301	TR,BJT,NPN	EQBN0007101	EMT3 ,0.15 W,R/TP ,LOW FREQUENCY
6	R101	RES,CHIP	ERHY0000241	1K ohm,1/16W,J,1005,R/TP
6	R102	RES,CHIP	ERHY0000512	10M ohm,1/16W,J,1608,R/TP
6	R103	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP
6	R105	RES,CHIP	ERHY0001102	0.2 ohm,1/4W ,F ,2012 ,R/TP
6	R107	RES,CHIP	ERHY0000230	330 ohm,1/16W,J,1005,R/TP
6	R108	RES,CHIP	ERHY0000152	82K ohm,1/16W,F,1005,R/TP
6	R111	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP
6	R114	RES,CHIP	ERHY0000204	12 ohm,1/16W,J,1005,R/TP
6	R115	RES,CHIP	ERHY0000204	12 ohm,1/16W,J,1005,R/TP
6	R120	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP
6	R121	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP
6	R122	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP
6	R123	RES,CHIP	ERHY0000265	20K ohm,1/16W,J,1005,R/TP

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Level	Location NO.	Part Name	Part Number	Spec
6	R124	RES,CHIP	ERHY0000265	20K ohm,1/16W,J,1005,R/TP
6	R190	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP
6	R200	RES,CHIP	ERHY0000261	10K ohm,1/16W,J,1005,R/TP
6	R205	RES,CHIP	ERHY0000237	680 ohm,1/16W,J,1005,R/TP
6	R206	RES,CHIP	ERHY0000237	680 ohm,1/16W,J,1005,R/TP
6	R207	RES,CHIP	ERHY0000237	680 ohm,1/16W,J,1005,R/TP
6	R208	RES,CHIP	ERHY0000237	680 ohm,1/16W,J,1005,R/TP
6	R209	RES,CHIP	ERHY0000237	680 ohm,1/16W,J,1005,R/TP
6	R210	RES,CHIP	ERHY0000237	680 ohm,1/16W,J,1005,R/TP
6	R231	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP
6	R232	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP
6	R233	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP
6	R234	RES,CHIP	ERHY0000296	1M ohm,1/16W,J,1005,R/TP
6	R236	RES,CHIP	ERHY0000241	1K ohm,1/16W,J,1005,R/TP
6	R237	RES,CHIP	ERHY0000247	2.2K ohm,1/16W,J,1005,R/TP
6	R239	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP
6	R240	RES,CHIP	ERHY0000293	510K ohm,1/16W,J,1005,R/TP
6	R241	RES,CHIP	ERHY0000202	4.7 ohm,1/16W,J,1005,R/TP
6	R242	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP
6	R243	RES,CHIP	ERHY0000202	4.7 ohm,1/16W,J,1005,R/TP
6	R244	RES,CHIP	ERHY0000138	33K ohm,1/16W,F,1005,R/TP
6	R261	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP
6	R262	RES,CHIP	ERHY0000220	100 ohm,1/16W,J,1005,R/TP
6	R263	RES,CHIP	ERHY0000220	100 ohm,1/16W,J,1005,R/TP
6	R264	RES,CHIP	ERHY0000241	1K ohm,1/16W,J,1005,R/TP
6	R265	RES,CHIP	ERHY0000247	2.2K ohm,1/16W,J,1005,R/TP
6	R266	RES,CHIP	ERHY0000247	2.2K ohm,1/16W,J,1005,R/TP
6	R271	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP
6	R272	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP
6	R275	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP
6	R276	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP
6	R277	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP
6	R280	RES,CHIP	ERHY0000261	10K ohm,1/16W,J,1005,R/TP
6	R305	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP
6	R306	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP
6	R307	RES,CHIP	ERHY0000244	1.5K ohm,1/16W,J,1005,R/TP
6	R308	RES,CHIP	ERHY0000912	15 ohm,1/10W,J,2012,R/TP
6	R311	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP
6	R312	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP
6	R313	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP

Level	Location NO.	Part Name	Part Number	Spec
6	R314	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP
6	R315	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP
6	R316	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP
6	R317	RES,CHIP	ERHY0000213	47 ohm,1/16W,J,1005,R/TP
6	R318	RES,CHIP	ERHY0000213	47 ohm,1/16W,J,1005,R/TP
6	R319	RES,CHIP	ERHY0000220	100 ohm,1/16W,J,1005,R/TP
6	R320	RES,CHIP	ERHY0000213	47 ohm,1/16W,J,1005,R/TP
6	R321	RES,CHIP	ERHY0000213	47 ohm,1/16W,J,1005,R/TP
6	R322	RES,CHIP	ERHY0000213	47 ohm,1/16W,J,1005,R/TP
6	R323	RES,CHIP	ERHY0000213	47 ohm,1/16W,J,1005,R/TP
6	R324	RES,CHIP	ERHY0000213	47 ohm,1/16W,J,1005,R/TP
6	R326	RES,CHIP	ERHY0000213	47 ohm,1/16W,J,1005,R/TP
6	R327	RES,CHIP	ERHY0000213	47 ohm,1/16W,J,1005,R/TP
6	R328	RES,CHIP	ERHY0000213	47 ohm,1/16W,J,1005,R/TP
6	R329	RES,CHIP	ERHY0000213	47 ohm,1/16W,J,1005,R/TP
6	R330	RES,CHIP	ERHY0000213	47 ohm,1/16W,J,1005,R/TP
6	R331	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP
6	R341	RES,CHIP	ERHY0000265	20K ohm,1/16W,J,1005,R/TP
6	R342	RES,CHIP	ERHY0000211	33 ohm,1/16W,J,1005,R/TP
6	R344	RES,CHIP	ERHY0000241	1K ohm,1/16W,J,1005,R/TP
6	R345	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP
6	R346	RES,CHIP	ERHY0000203	10 ohm,1/16W,J,1005,R/TP
6	R348	RES,CHIP	ERHY0000265	20K ohm,1/16W,J,1005,R/TP
6	R349	RES,CHIP	ERHY0000280	100K ohm,1/16W,J,1005,R/TP
6	R401	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP
6	R407	RES,CHIP	ERHY0008201	24 ohm,1/16W ,J ,1005 ,R/TP
6	R408	RES,CHIP	ERHY0000226	220 ohm,1/16W,J,1005,R/TP
6	R409	RES,CHIP	ERHY0000226	220 ohm,1/16W,J,1005,R/TP
6	R410	RES,CHIP	ERHY0000210	30 ohm,1/16W,J,1005,R/TP
6	R411	RES,CHIP	ERHY0000224	180 ohm,1/16W,J,1005,R/TP
6	R412	RES,CHIP	ERHY0000224	180 ohm,1/16W,J,1005,R/TP
6	R413	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP
6	R414	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP
6	R415	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP
6	R416	RES,CHIP	ERHY0000241	1K ohm,1/16W,J,1005,R/TP
6	R418	RES,CHIP	ERHY0000220	100 ohm,1/16W,J,1005,R/TP
6	R419	RES,CHIP	ERHY0000261	10K ohm,1/16W,J,1005,R/TP
6	R427	RES,CHIP	ERHY0000201	0 ohm,1/16W,J,1005,R/TP
6	SW400	CONN,RF SWITCH	ENWY0003301	,SMD ,0.4 dB,

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Level	Location NO.	Part Name	Part Number	Spec
6	U101	IC	EUSY0280001	CSP_BGA ,289 PIN,R/TP ,GSM Onechip Baseband
6	U102	IC	EUSY0311401	BGA ,64 PIN,R/TP ,128Mb_NOR+32Mb_pS MirrorBIT
6	U201	IC	EUSY0119002	4X3 UCSP / CODE : B12-4 ,10 PIN,R/TP ,DUAL SPDT ANALOG SWITCHES(Pb Free)
6	U202	IC	EUSY0309201	10pin,TDFN,1.4W differential power amp ,10 PIN,R/TP ,AUDIO AMP
6	U204	IC	EUSY0077301	SC70-6 ,6 PIN,R/TP ,SPDT Analog switch
6	U205	IC	EUSY0077701	SC70-5 ,5 PIN,R/TP ,1.8V Low Voltage Comparator with Rail-to-Rail Input, Pb Free
6	U300	IC	EUSY0124601	SOT23-6 ,6 PIN,R/TP ,Charge Pump
6	U401	RF MODULE,HANDSET	SMRH0003801	MHz, MHz, ,ASM + PAM
6	U402	IC	EUSY0280101	LFCSP-32 ,32 PIN,R/TP ,GSM QUAD BAND TRANSCEIVER, Othello G.
6	VA101	VARISTOR	SEVY0003901	5.5 V, ,SMD ,480pF, 1005
6	VA201	VARISTOR	SEVY0003901	5.5 V, ,SMD ,480pF, 1005
6	VA202	VARISTOR	SEVY0003901	5.5 V, ,SMD ,480pF, 1005
6	VA203	VARISTOR	SEVY0003901	5.5 V, ,SMD ,480pF, 1005
6	VA204	VARISTOR	SEVY0003901	5.5 V, ,SMD ,480pF, 1005
6	VA205	VARISTOR	SEVY0003901	5.5 V, ,SMD ,480pF, 1005
6	VA300	VARISTOR	SEVY0003901	5.5 V, ,SMD ,480pF, 1005
6	X100	X-TAL	EXXY0015601	32.768 KHz,20 PPM,7 pF,65000 ohm,SMD ,6.9*1.4*1.3 ,Overlapping Part Cleansing, Replace with EXXY0004601 , ,32.768KHz ,20PPM , , , ,SMD ,R/TP
6	Y400	X-TAL	EXXY0018403	26 MHz,10 PPM, pF, ohm,SMD ,3.2*2.5*0.7 ,temporary spec, W-191-451 ,; ,26 ,10PPM , , , ,SMD , R/TP
5	SAFD00	PCB ASSY,MAIN,SMT TOP	SAFD0079901	KG110 (ATOM) PCB ASSY,MAIN,SMT TOP
6	C221	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP
6	C222	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP

Level	Location NO.	Part Name	Part Number	Spec
6	C223	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP
6	C224	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP
6	C225	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP
6	C226	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP
6	C272	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP
6	C273	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP
6	C274	CAP,CERAMIC,CHIP	ECCH0000120	39 pF,50V,J,NP0,TC,1005,R/TP
6	C301	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP
6	C302	CAP,CERAMIC,CHIP	ECCH0004904	1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP
6	CN301	CONNECTOR,BOARD TO BOARD	ENBY0018701	41 PIN,0.3 mm,STRAIGHT , ,0.9t stacking height
6	LD201	DIODE,LED,CHIP	EDLH0011601	BLUE ,1608 ,R/TP ,PB-FREE
6	LD202	DIODE,LED,CHIP	EDLH0011601	BLUE ,1608 ,R/TP ,PB-FREE
6	LD203	DIODE,LED,CHIP	EDLH0011601	BLUE ,1608 ,R/TP ,PB-FREE
6	LD204	DIODE,LED,CHIP	EDLH0011601	BLUE ,1608 ,R/TP ,PB-FREE
6	LD205	DIODE,LED,CHIP	EDLH0011601	BLUE ,1608 ,R/TP ,PB-FREE
6	LD206	DIODE,LED,CHIP	EDLH0011601	BLUE ,1608 ,R/TP ,PB-FREE
6	MIC200	MICROPHONE	SUMY0003809	FPCB ,42 dB,4*1.5 ,
6	R221	RES,CHIP	ERHY0000213	47 ohm,1/16W,J,1005,R/TP
6	R222	RES,CHIP	ERHY0000213	47 ohm,1/16W,J,1005,R/TP
6	R223	RES,CHIP	ERHY0000213	47 ohm,1/16W,J,1005,R/TP
6	R224	RES,CHIP	ERHY0000213	47 ohm,1/16W,J,1005,R/TP
6	R225	RES,CHIP	ERHY0000213	47 ohm,1/16W,J,1005,R/TP
6	R226	RES,CHIP	ERHY0000213	47 ohm,1/16W,J,1005,R/TP
6	R301	RES,CHIP	ERHY0000274	51K ohm,1/16W,J,1005,R/TP
6	R302	RES,CHIP	ERHY0000215	56 ohm,1/16W,J,1005,R/TP
6	R303	RES,CHIP	ERHY0000215	56 ohm,1/16W,J,1005,R/TP
6	R304	RES,CHIP	ERHY0000274	51K ohm,1/16W,J,1005,R/TP
5	SPFY00	PCB,MAIN	SPFY0138601	FR-4 ,1.0 mm,MULTI-6 , ,; , , , , , , , , ,

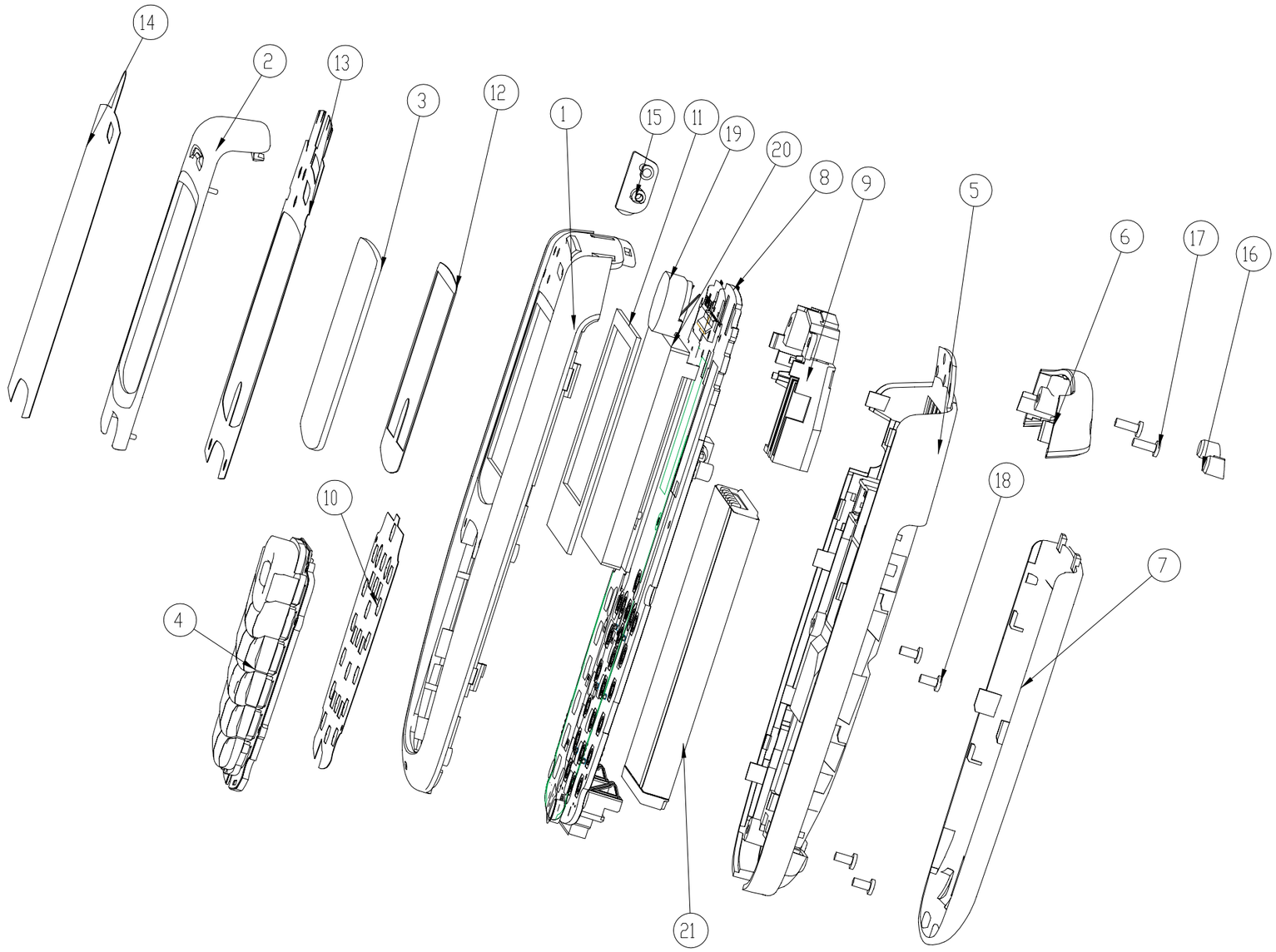
<Mechanic Component>

5. APPENDIX-BOM

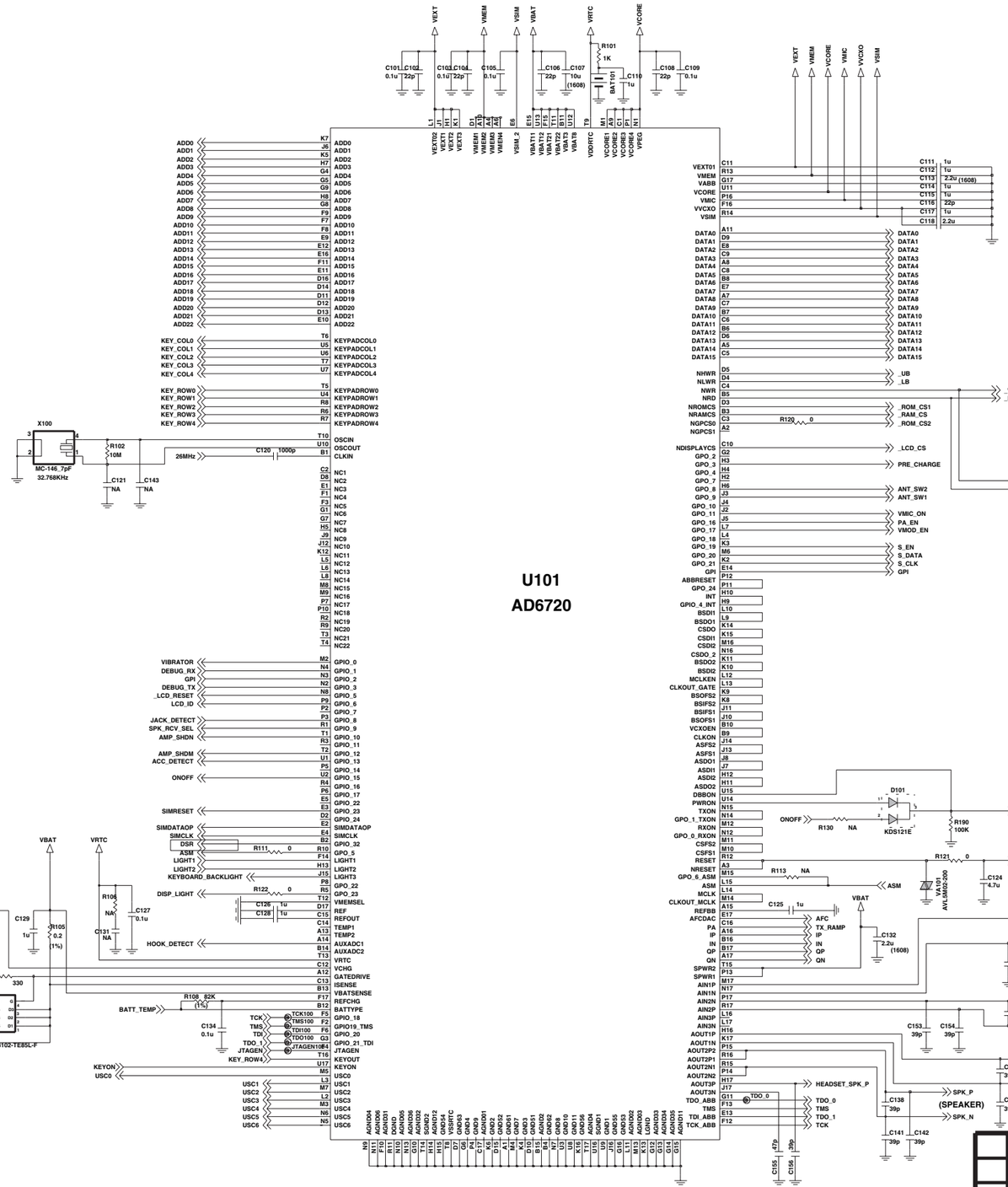
Level	Location NO.	Part Name	Part Number	Spec	Color	Remark
1		GSM,BAR/FILP	TGSM0046101			
2	AAAY00	ADDITION	AAAY0170601			
3	MCJA00	COVER,BATTERY	MCJA0034701	KG110 BATTERY COVER(PC)	BLACK	7
2	ABEZ00	BOX ASSY	ABEZ0067201			
2	APEY00	PHONE	APEY0324301	KG110 PHONE	BLACK	
3	ACGK00	COVER ASSY,FRONT	ACGK0077501	KG110 FRONT ASSY	BLACK	
4	MCCC00	CAP,EARPHONE JACK	MCCC0038601	KG110 EARPHONE JACK CAP	BLACK	15
4	MCJK00	COVER,FRONT	MCJK0061901	KG110 FRONT COVER(PC)	BLACK	1
4	MDAG00	DECO,FRONT	MDAG0022201	KG110 FRONT DECO(PC)	BLACK	2
4	MPBG00	PAD,LCD	MPBG0049501	KG110 LCD PAD	BLACK	11
4	MTAA00	TAPE,DECO	MTAA0121801	KG110 FRONT DECO TAPE		13
4	MTAB00	TAPE,PROTECTION	MTAB0123101	KG110 PROTECTION TAPE		14
4	MTAD00	TAPE,WINDOW	MTAD0056801	KG110 WINDOW TAPE		12
3	ACGM00	COVER ASSY,REAR	ACGM0076701	KG110 REAR ASSY	BLACK	
4	MCJN00	COVER,REAR	MCJN0056701	KG110 REAR COVER(PC)	BLACK	5
4	MDAK00	DECO,REAR	MDAK0011701	KG110 REAR DECO(PC)	BLACK	6
3	AKAZ00	KEYPAD ASSY	AKAZ0016901	KG110 KEYPAD	BLACK	4
3	GMEY00	SCREW MACHINE,BIND	GMEY0004001	1.4 mm,4.0 mm,MSWR3(BK) ,		17
3	GMZZ00	SCREW MACHINE	GMZZ0015101	1.4 mm,3.0 mm,MSWR3(FN) ,		18
	MICZ00	INSERT NUT	MICZ0027801	M1.4*L3.3		19
	MICZ00	INSERT NUT	MICZ0027901	M1.4*L4.7		20
3	MCCH00	CAP,SCREW	MCCH0089401	KG110 SCREW CAP	BLACK	16
3	MWAC00	WINDOW,LCD	MWAC0069801	KG110 LCD WINDOW	BLACK	3
	ADCA00	DOME ASSY	ADCA0056401	KG110 DOME ASSY		10
	MIDZ0	INSULATOR ON REAR	MIDZ0108401	KG110 REAR INSULATOR		21
	MIDZ0	INSULATOR ON PCB	MIDZ0108501	KG111 PCB INSULATOR		22

2. Exploded View

EXPLODE VIEW

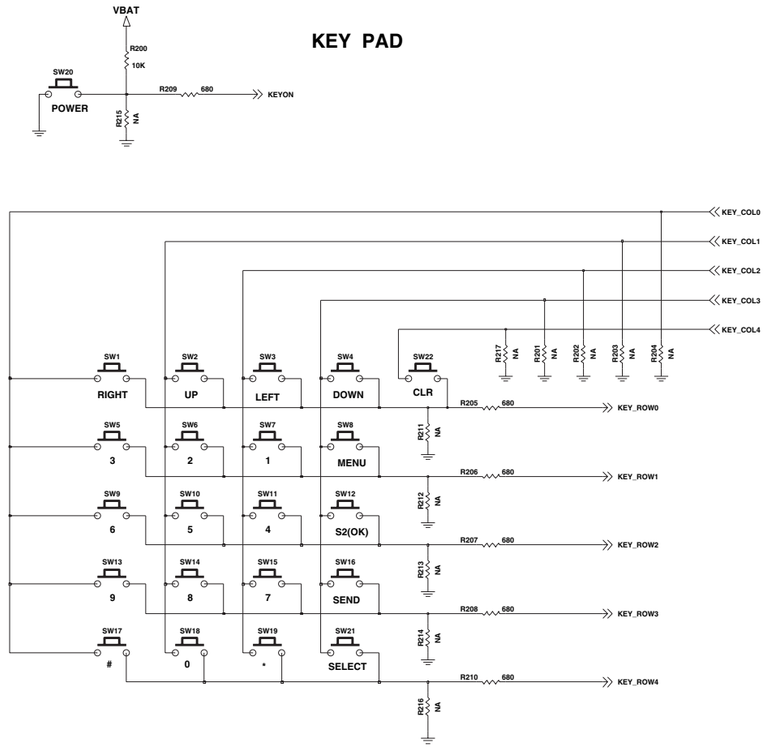


21	BATTERY	1	SBPL0083501
20	LCD	1	SVLM0021401
19	SPEAKER	1	SUSY0022301
18	SCREW MACHINE	4	GMZZ0015101
17	SCREW MACHINE,BIND	2	GMEY0004001
16	CAP,SCREW	2	MCCH0089401
15	CAP,EARPHONE JACK	1	MCCC0038601
14	TAPE,PROTECTION	1	MTAB0123101
13	TAPE,DECO	1	MTAA0121801
12	TAPE,WINDOW	1	MTAD0056801
11	PAD,LCD	1	MPBG0049501
10	DOME ASM	1	ADCA0056401
9	INTENNA	1	
8	PCB ASM	1	
7	COVER,BATTERY	1	MCJA0034701
6	DECO,REAR	1	MDAK0011701
5	COVER,REAR	1	MCJN0056701
4	KEYPAD,ASSY	1	AKAZ0016901
3	WINDOW,LCD	1	MWAC0069801
2	DECO,FRONT	1	MDAG0022201
1	COVER_FRONT	1	MCJK0061901
NO.	PART NAME	QTY	PART.NO

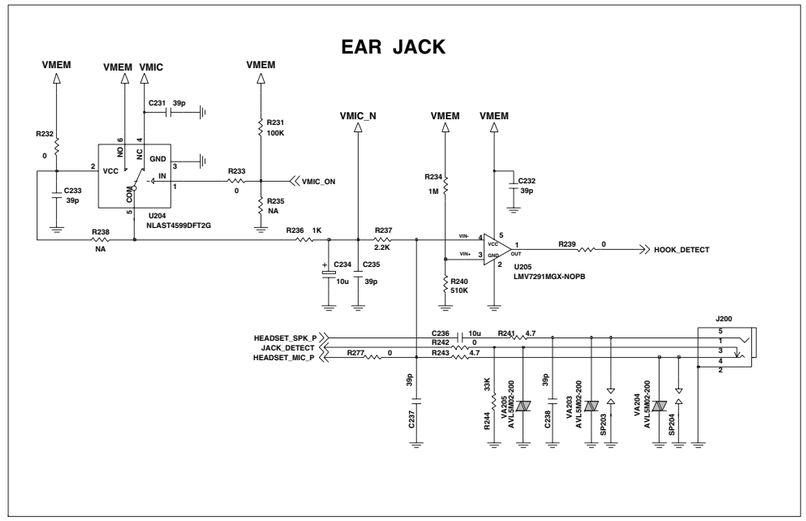


				Section	Date	Sign & Name	MODEL	KG110	Sheet/ Sheets
				Designer	06/05/30	Guo Peng			1/4
				Checked			DRAWING NAME	AD6720,MEMORY	
				Approved					
Iss.	Notice No.	Date	Name	LG Electronics Inc.			DRAWING NO.	Ver 1.0	

KEY PAD

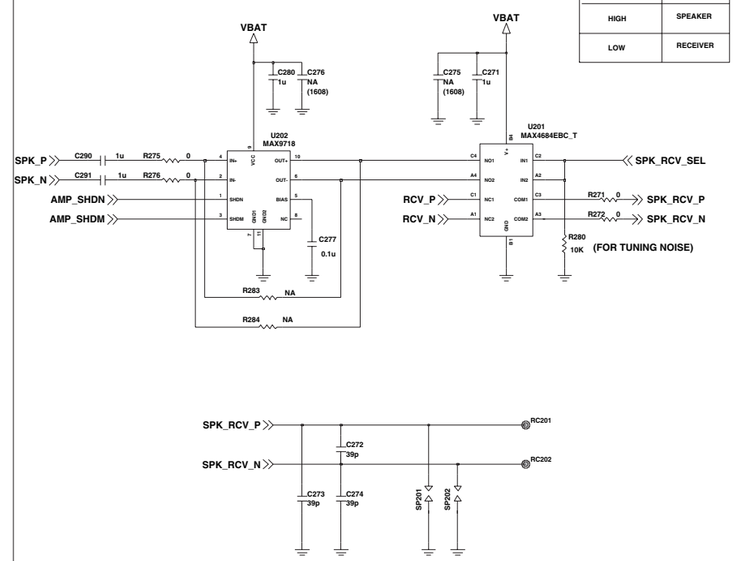


EAR JACK



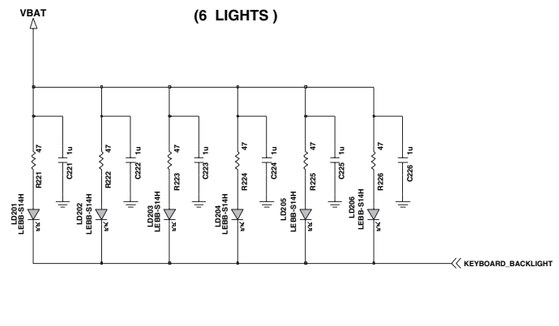
AUDIO

SPK_RCV_SEL	SELECT
HIGH	SPEAKER
LOW	RECEIVER

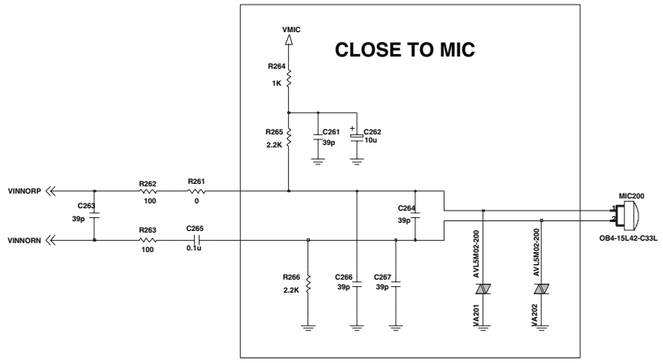


KEY BACKLIGHT

(6 LIGHTS)

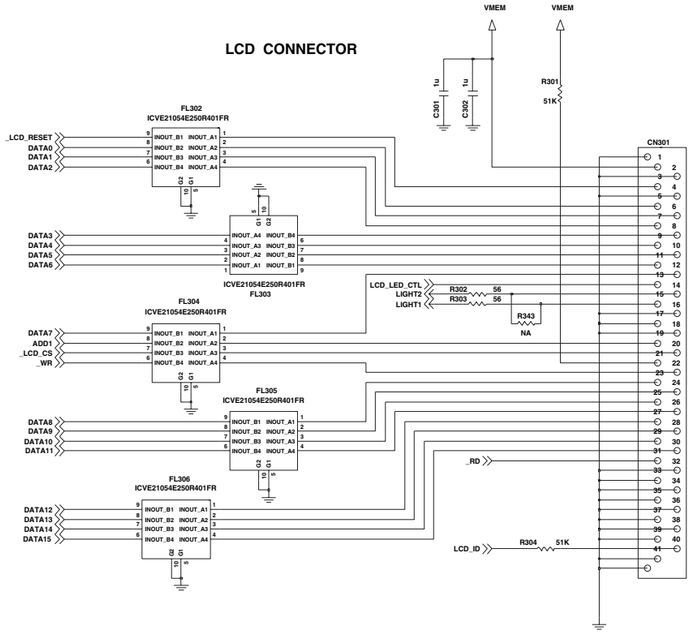


CLOSE TO MIC



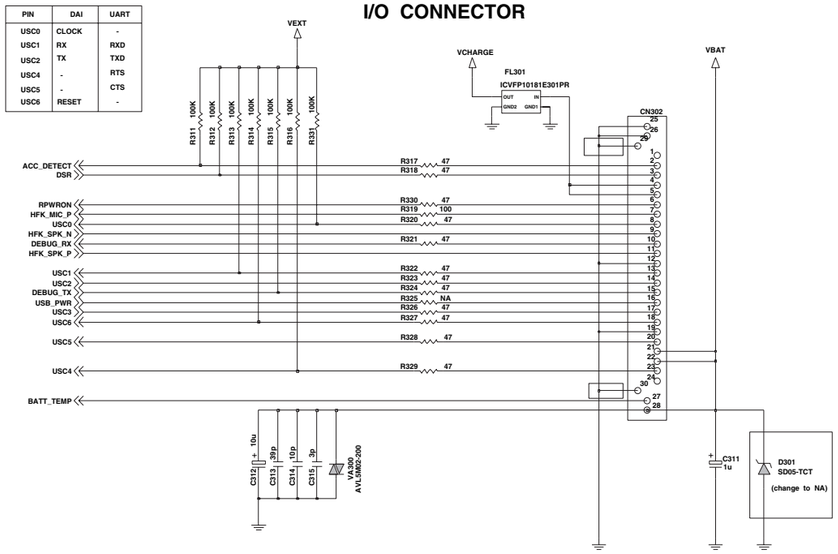
				Section	Date	Sign & Name	MODEL	KG110	Sheet/ Sheets
				Designer	06/05/30	Cai Xinchao			2/4
				Checked			DRAWING NAME	AUDIO, MMI	
				Approved					
Iss.	Notice No.	Date	Name	LG Electronics Inc.			DRAWING NO.	Ver 1.0	

LCD CONNECTOR

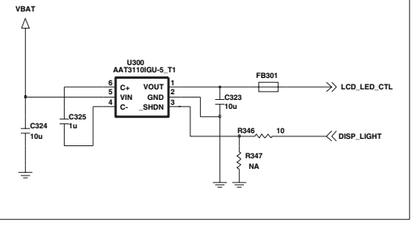


I/O CONNECTOR

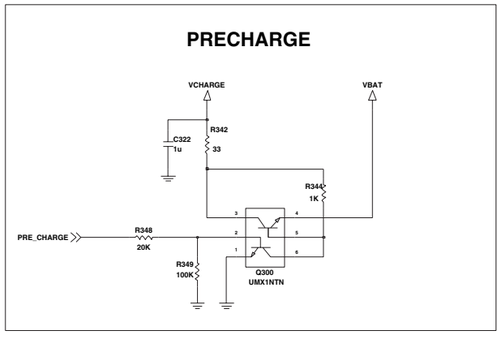
PIN	DAI	UART
USC0	CLOCK	-
USC1	RX	RXD
USC2	TX	TXD
USC4	-	RTS
USC5	-	CTS
USC6	RESET	-



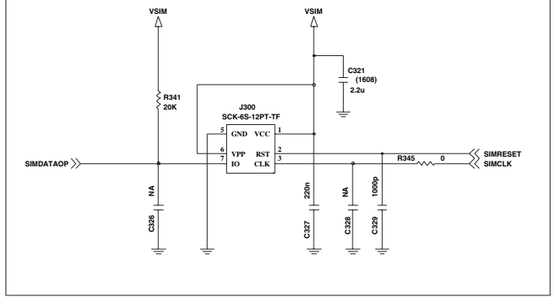
CHARGE PUMP



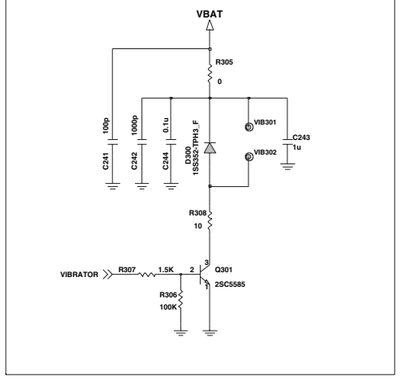
PRECHARGE



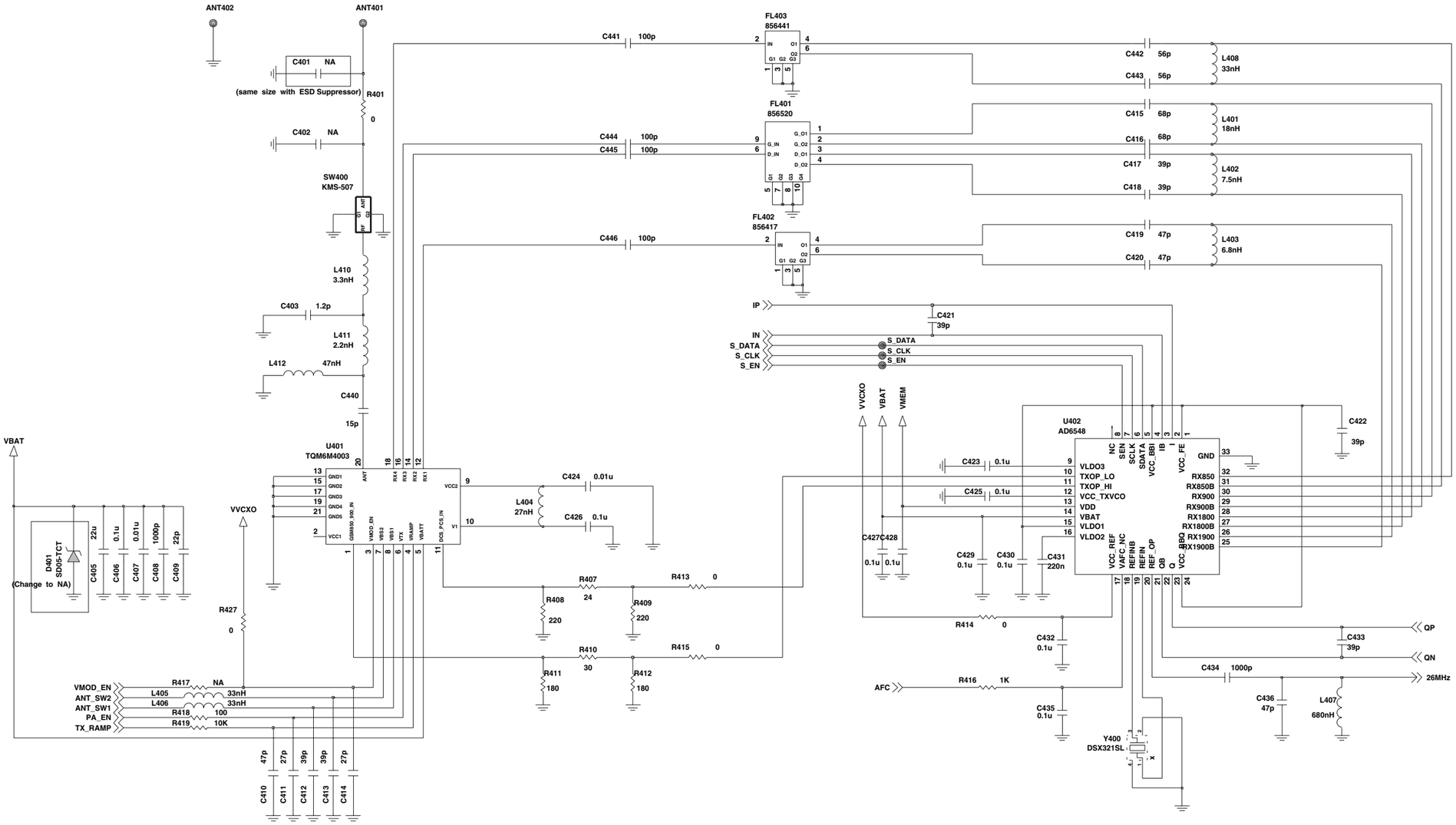
SIM CONNECTOR



VIBRATOR



				Section	Date	Sign & Name	MODEL	KG110	Sheet/ Sheets
				Designer	06/05/30	Liang Bing			3/4
				Checked			DRAWING NAME	CONNECT, CHARGE PUMP, SIM, VIB	
				Approved					
Iss.	Notice No.	Date	Name	LG Electronics Inc.			DRAWING NO.	Ver 1.0	



Operating Mode	Control Voltage			
	Vmod_en	Vtx	Vbs1	Vbs2
TX GSM 850/900	H	H	L	L
TX DCS/PCS	H	H	H	L
RX1	H	L	L	L
RX2	H	L	L	H
RX3	H	L	H	L
RX4	H	L	H	H
Sleep Mode	L	L	L	L

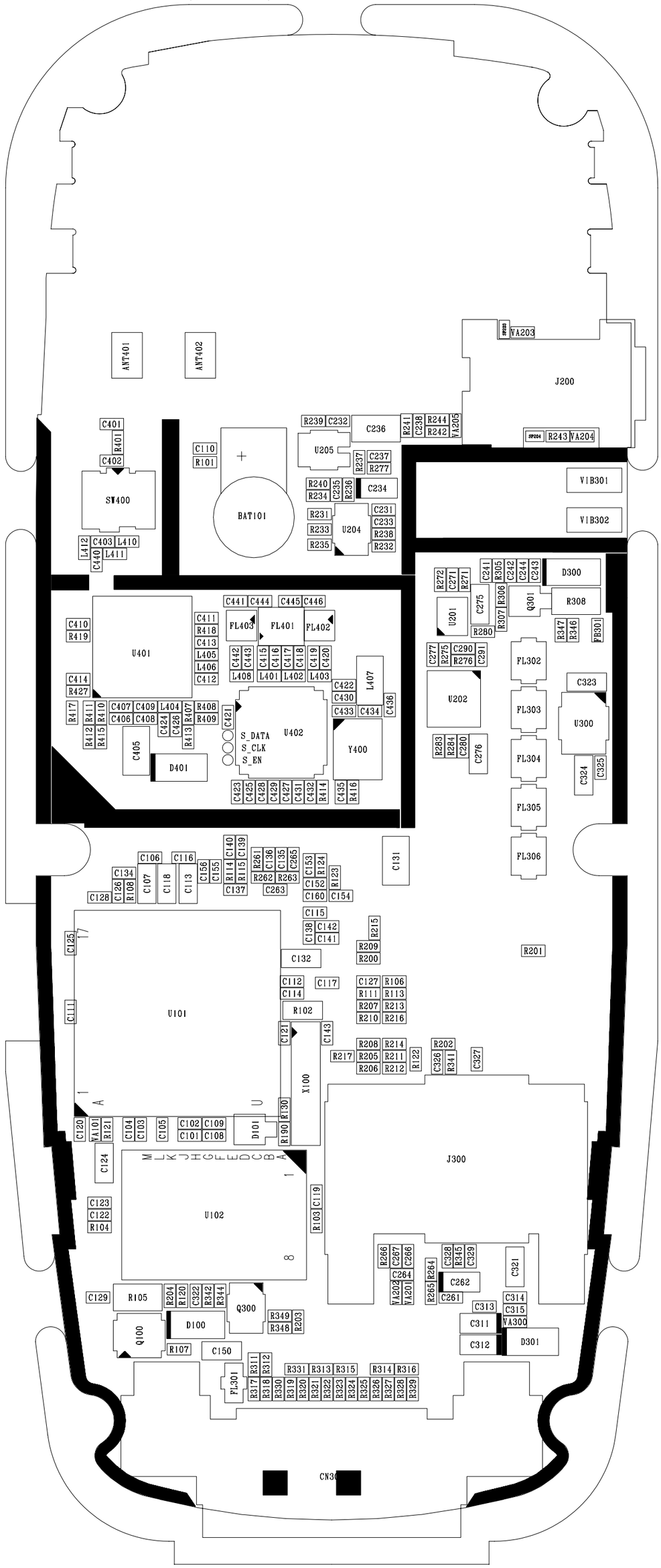
Iss.	Notice No.	Date	Name

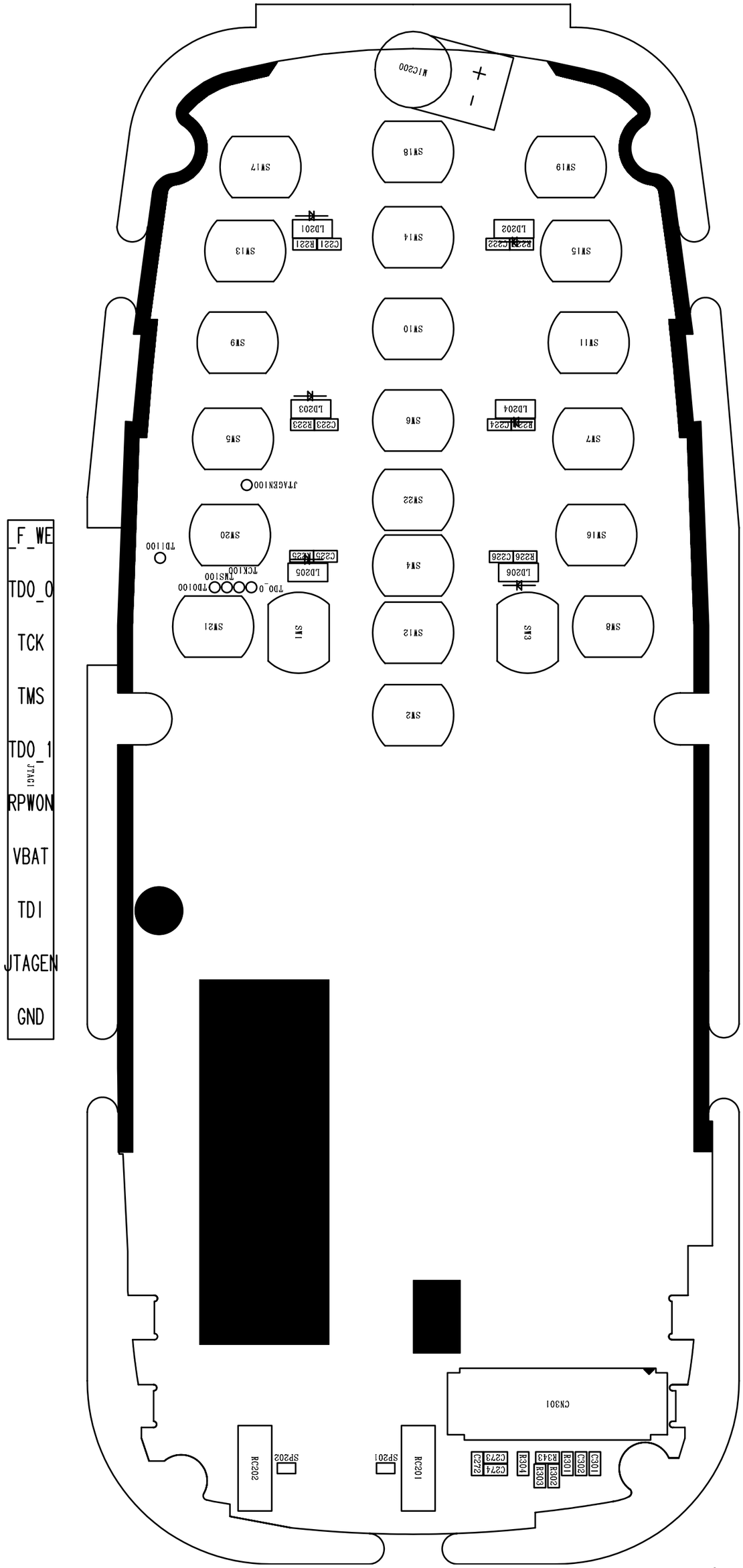
Section	Date	Sign & Name
Designer	06/05/30	Lang Xian li
Checked		
Approved		

LG Electronics Inc.

MODEL	KG110	Sheet/Sheets 4/4
DRAWING NAME	RF	
DRAWING NO.	Ver 1.0	

CAM350 V 8.0 : Wed May 31 16:02:41 2006 - (Untitled)




_F_WE
TDO_0
TCK
TMS
TDO_1
JTAG1
RPWON
VBAT
TDI
JTAGEN
GND
MIC200
SW1
SW2
SW3
SW4
SW5
SW6
SW7
SW8
SW9
SW10
SW11
SW12
SW13
SW14
SW15
SW16
SW17
SW18
SW19
SW20
SW21
SW22
LD201
LD202
LD203
LD204
LD205
LD206
JTAGEN100
TDI100
TCK100
TMS100
TDO100
TDO_0
CN301
SP201
SP202
RC201
RC202
C301
C302
C273
C274
C275
C276
R301
R302
R303
R304
R305
R306
R343
R344
R345
R346